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INSTITUTE FOR DEFENSE ANALYSES

Joint
Advanced
Warfighting
Program

FY 2000 End of Year Report:
Volume II

Joint Advanced Warfighting Program

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Contents

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Millennium Challenge '00 – Road to War

WORLD VIEW 2010. The bipolar world of the late 20th Century has returned with the emergence of a Peer Competitor, from here forward known as The United Peoples Republic of Kashana (UPRK) who is challenging the United States 20+ year role as sole superpower and world policeman. The UPRK and the Islands of Aragon and Pacifica all fall under the responsibility of the same Unified Commander, CINCWEST. The CINCWEST AOR is increasingly important for US trade, regional/global security, and the global economy.

POLITICAL SITUATION. The United States and the UPRK are co-equal members of the United Nations and both have veto power within the UN Security Council. The UPRK has been repeatedly at odds with the US on a number of regional and global security issues. The UPRK is exerting itself on the nation states within its self-declared regional area of influence in an effort to test the United States commitment to historical friends and allies. Within the region, the United States is a member of the Island Alliance for Mutual Security with the Republic of Cortina, The Republic of Victoria and a number of other states. Additionally, the United States is negotiating a bi-lateral mutual defense treaty with the island nation of Nevidah.

The island of Aragon is composed of three sovereign nations. All three nations are former colonies of Great Britain, France or Spain. The French Colony of Nouvelle Anjou was established in 1723, seized by the British in 1803 and renamed Cortina. In 1724, the British established the Colony of Victoria. In 1551, the Spanish established the Colony of Nuevo Aragon. In 1940, it declared its independence from Spain and was renamed the Republic of Atlantica and recognized by both Great Britain and the US. In 1976, both Victoria and Cortina were granted their independence by Great Britain and asked all British military forces to leave. French military forces and advisors subsequently filled this void. The ongoing civil unrest challenging the Republic of Cortina has its roots in the communist overthrow of the Republic of Atlantica government in 1962 (forming the PDRA) and the establishment of an Atlantica government in exiles (Government of Free Atlantica) in the Republic of Cortina. In 1969 the Cortina Liberation Front was formed and throughout the ensuing years it is believed to have backed PDRA plans to re-unite Atlantica. CLF insurgent acts have included non-violent political activity as well as acts of terrorism. The Peoples Democratic Republic of Atlantica, with the support of the UPRK has been supporting an insurgency within the Republic of Cortina in an attempt to gain control of and incorporate Cortina into the PDRA. The PDRA has also accused the

Republic of Cortina of aiding and abetting the exiled Government of Free Atlantica by covertly supporting their insurgent efforts within the PDRA. The Peoples Democratic Republic of Atlantica (PDRA) signed a mutual defense treaty with the former Soviet Union in 1971 (now noneffective) and they currently have an extensive military assistance agreement with the UPRK. The Republic of Victoria considers itself a neutral and it has no ties with the UPRK, but it is a member of the Island Alliance for Mutual Security signed in 1992. The Republic of Cortina, is allied with the US and a number of other states through the 1992, Island Alliance for Mutual Security Defense Treaty.

The island of Pacifica is also composed of three sovereign nations: The Peoples' Republic of Califon, The Republic of Nevidah and the Washorgon Confederation. A very loose coalition exists among the three countries and it has historical significance but no formal structure or current application. A Prime Minister who exercises complete control over all aspects of the government governs the Peoples Republic of Califon. There are no states and individuals have little influence in local or state affairs. Califon has close economic and military ties to the UPRK. The Washorgon Confederation is a neutral country with neither ties nor treaties with the US or UPRK. It is characterized as having a weak national government and strong state government. The Republic of Nevidah has long standing ethnic and cultural ties to the US and it is currently conducting negotiations with the US to establish a bi-lateral mutual defense treaty. Nevidah has recently announced the plans to build a major commercial seaport on its East Coast. This port will be used to export the precious metals and minerals that provide great economic prosperity and are currently exported through ports in Califon. Nevidah's announcement that it would build its own port is believed to be the root cause of the political turmoil and civil unrest that has led to the resignation of the Prime Minister and the installation of a new government. Agents of Califon posing as guest workers which is resulting in further internal security problems and instability further feed this turmoil. Given the ongoing political unrest in Nevidah, Califon perceives an opportunity that would allow it to step in and gain control through financing and providing arms support to covert operations in Nevidah, with the full support and corporation of the UPRK.

ECONOMIC SITUATION. The region has made a remarkable recovery from a near economic collapse at the close of the last decade with the support of the World Bank, the International Monetary Fund, and a growing global economy. This economic growth has been largely responsible for the emergence of the UPRK. The UPRK has reduced its previous trade imbalances, and made significant banking and market reforms that have enabled it to accumulate large amounts of hard currency. It has used this hard currency to purchase technologies that have both industrial and defense applications.

The United States' trade imbalance in the region has worsened. Tariff and trade barriers have further restricted our access to the markets throughout the region.

While the US is still a significant trading partner in the region, it has been replaced as the leading importer and exporter of goods and services by the UPRK.

Economies throughout the Island of Pacifica are based on forestry, mining, light manufacturing, agriculture and tourism. Pacifica is most noted for its precious metals and minerals. One-third of these lie within the borders of Califon and two-thirds within the borders of Nevidah. Califon and Nevidah are the world's leading supplier of minerals to high tech industries. Nevidah's national income is almost totally reliant on the mineral fields. While Califon was able to exploit a smaller portion of the mineral field, it did profit from the export of almost all of the minerals – whether mined by Califon or Navidah – through the three major ports in Califon. Additionally, Califon receives significant economic assistance from UPRK. In recent years, Nevidah has considered developing its own major port and thus reaping the economic benefits of exporting its own minerals. The question of developing this port has re-ignited smoldering differences between the individual states of Nevidah and has led to significant unrest, fueled by the number of guest workers from Califon who are employed in the mining and mine product transportation system.

Economies throughout the Island of Aragon are based on forestry, petroleum, natural gas, light manufacturing, agriculture and tourism. Aragon is noted for its petroleum and natural gas reserves (world's fifth largest field recently discovered) on the island and in the coastal waters nearest the Republic of Cortina. It is estimated that these reserves can supply approximately 40% of the region's oil and gas requirements for the next 30 years. Sixty percent of the reserve fall within the Republic of Cortina and its territorial waters, 30% within the Peoples Democratic Republic of Atlantica and its territorial waters and 10% within the Republic of Victoria. The Republic of Cortina's national income is almost totally reliant on oil. Its national economy is depressed as a result of this dependence and the current worldwide glut of available crude oil. This has created a growing deficit and has limited the Republic of Cortina's ability to secure and invest additional capital to diversify its economy. The Republic of Victoria's economic situation is much like that of Cortina. It has limited natural resources and its over reliance on its oil producing income has led to increased deficit financing and the inability to create venture capital for diversifying its economy. The Peoples' Democratic Republic of Atlantica has a state run economy. It has resisted western business practices and there is a booming black market for consumer goods. It is dependent on outside support received principally from the UPRK. It exports primarily agricultural products and imports oil, other mineral fuels, manufactured goods and capital equipment.

MILITARY SITUATION. United States military presence in the region has dwindled from a high of 100,000 soldiers, sailors and airmen in the 1990s to a current level of 25,000. The 2010 National Military Strategy of Engage, Prepare and Respond has resulted in fewer forward land based deployed forces and more

rotational sea based and land based exercise forces. With the vast majority of US forces based in CONUS, the US has invested heavily in strategic deployment assets. Additionally, each service has developed rapid deployment forces that provide the supported CINC with the ability to conduct Rapid Decisive Operations throughout the broad spectrum of war. As a result, the US is clearly the world's leader in the power projection capabilities.

The UPRK is a military peer of the United States with a 3 million-man standing defense force. It has a very capable land component, a traditional coastal defense navy with a developing blue water capability, and a robust air component, all of which are out fitted with advanced technologies. UPRK has strategic sea based, air based and ground based nuclear forces, a ballistic missile offensive capability, a robust integrated air defense system and a national missile defense system. Additionally, it has the means to conduct limited power projection operations throughout its Area Of Influence and it has a limited Chemical/Biological weapons arsenal. The UPRK is a signatory to the Nuclear Test Ban Treaty and the Non-Proliferation Treaty.

Current US presence in Aragon: Defense Attaché in PDRA, Cortina and Victoria. Special Operations Forces are deployed throughout the island.

Current US presence in Pacifica: Defense Attaché in Califon, Nevidah and Washorgon. Special Operations forces are deployed throughout the island. A brigade set of equipment pre-positioned in Nevidah.

The Peoples' Republic of Califon's military is highly regarded as the largest and best equipped on the Island of Pacifica. Over the years, Nevidah and Washorgon have all but ceded responsibility to Califon for defending their Island against external threats. As a result a very loose coalition existed among the islands three nation states regarding defense from external threats. Califon's Army boasts highly capable infantry, mechanized and armored divisions. Its Air Force can defend Califon's air space from all but a massive coordinated air attack, and it maintains effective deep strike, transport and reconnaissance forces. Califon's Navy is primarily a coastal defense force, but its vessels have recently spent more time steaming and exercising in open ocean areas. Califon has used its mineral and ore export income to purchase significant amounts of modern military equipment from the UPRK to include medium range ballistic missiles.

The Republic of Nevidah's defense strategy and force structure is based on defending key cities and mining centers against internal security threats. Its Army is small but experienced in small-unit operations. The Air Force has a minimal air defense capability but it is highly skilled in CAS and counter-insurgency warfare. The Nevidah navy is a small coastal defense force. Nevidah's military, though

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modest in size, is loyal and professional. Its leaders have received extensive training in US, Canadian and Western service academies.

The Confederation of Washorgon has traditionally worried little about off-island threats and has based its defense planning and military budgets on defeating low intensity ground and air threats. It has a Homeland Self-Defense Force (HSDF) that incorporates three military services. HSDF has responsibility for securing Washorgon's only major port, interdicting smugglers, and reducing illegal border crossings. The Army is primarily a light infantry force. The Washorgon Air Force performs surveillance, reconnaissance, CAS, and counter-insurgency missions. The Navy has no blue water capability.

The Peoples' Democratic Republic of Atlantica's military is composed of the People's Revolutionary Army (PRA), the People's Revolutionary Navy (PRN), the People's Revolutionary Air Force (PRAF) and the People's Revolutionary Air Defense Force (PRADF). Its military forces are well led, but schooled in the doctrine of the former Soviet Union. The majority of its equipment was provided by the former Soviet Union, however it is expected to receive significantly improved equipment through the PDRK. The capabilities most sought by the PDRA include Multiple Rocket Launchers and Ballistic Missiles. The PRA has infantry, armor, airborne and special operations forces. The PRN is principally a coastal defense naval force but has been observed training in more open seas. In addition to its regular coastal defense forces it has a small submarine force and a limited offensive mining capability. PRAF ICW the PRADF is capable of marginally defending the airspace of the PDRA. It has fighter/bomber squadrons, transportation squadrons and attack/transportation helicopter squadrons. The PRADF (a sub-component of the PRAF) has multiple fighter squadrons and missile regiments.

The Republic of Cortina military is composed of four branches, the Army (RCA), the Navy (RDN), the Air Force (RCAF) and the Republic of Cortina National Gendarmerie (RCNG).   The RCA is the largest regular force followed by the RCAF and the RCN. All regular forces are equipped with mostly western equipment and have recent experience in counter insurgency operations but are believed ill prepared to conduct combined operations in a medium intensity conflict. While all forces are well led, they are for the most part, poorly trained and over extended. The RCA has nine combat divisions (brigade size), five mobile groups, one para-comando group, three coastal defense groups and five regional combat commands. The RCN is principally a coastal defense navy. The RCAF has fighter, attack, search-attack and transportation squadrons in addition to helicopter forces. The RCNG is 6,600 strong and performs principally border, coastal and internal security duties. Unique to the Republic of Cortina's military is the close association of its officer Corps to its national political establishment.

The Victorian National Armed Forces (VNAF) are comprised of the Republic of Victoria Army (RVA), Air Force (RVAF), and Navy (RVN). The military has capable leadership, yet the overall VNAF is assessed as being poorly trained and not fully committed to combating insurgency. The VNAF equipment comes primarily from the US and Great Britain and they are currently under-going a training program on new equipment. The RVA is very small and geographically dispersed. It has infantry, mechanized, artillery, air defense and aviation forces. The RVN is primarily a coastal navy. The RVAF possesses fighter squadrons, attack squadrons, transport and reconnaissance squadrons. Additionally, the Victorian National Police (5,000 man force) performs border, coastal and internal security duties.

SIGNIFICANT EVENTS:

April 2000

US: CINCWEST testifies before the House and Senate Foreign Relations committees regarding ongoing activities in Pacifica and Aragon. Covert Regional Engagement Forces (REF) are actively engaged throughout the islands.

Pacifica: Nevidah announces its intention to build its own port. This created civil unrest within Nevidah. Califon uses this as an excuse to deploy its forces forward to supposedly protect its portion of the mineral fields. Califon forces begin a large Corps level exercise along the Califon Nevidah border. Concerned about the growing rift between itself and Califon and the large Califon military exercise, Nevidah signs a mutual defense treaty with the US. There is continued unrest in Nevidah.

Aragon: The PDRA reportedly receives significantly upgraded military equipment along with training and advisors from the UPRK.

May 2000

US: NCA is increasingly aware of potential for conflict in both Aragon and Pacifica. The NSC meets to discuss US response to the deteriorating situations. Covert REF actively engaged throughout the islands.

Pacifica: Califon provides covert support to Nevidah's opposition (militia) groups.

Aragon: PDRA continues to provide money and arms to the Cortina Liberation Front (CLF) in support of on going insurgency actions in Cortina. CLF is fairly effective in promoting civil unrest.

June 2000

US: CJCS issues Warning Order to CINCWEST (D-90). The CINC and his staff review OPLANS for the regional contingencies (Aragon and Pacifica). CJCS issues planning order for Pacifica (D-80). The US Embassy in Cortina reportedly receives an anonymous tip suggesting that the PDRA is developing plans for the invasion of Cortina.

Pacifica: Nevidah's government overthrown and an interim government formed. Civil unrest and instability increase in both frequency and scope. Nevidah requests

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assistance from Coalition forces (not US) to assist with the restoration of civil order and assistance from the US in the form of a deterrence force.

Aragon: PDRA forces reportedly upgrading forward airfields and establishing forward logistics bases.

JULY 2000

US: Activity within the region leads the NCA and the CINC to prioritize and allocate resources first to Pacifica and then to Aragon. CJCS issues Planning Order to CINCWEST (D-80) and Deployment Order for AEF#1 (D-45). CJCS issues Alert Order to CINCWEST (D-45). US AEF arrives in Nevidah (D-30) and participates in defensive exercises with the Nevidah Air Forces as part of its deterrent mission. Forward deployed CVBG and ARG moves into the region (D-45). US intelligence confirms presence of ballistic missiles in Califon and evidence of infrastructure to support ballistic missiles is being developed in the PDRA.

Pacifica: Coalition Forces deploy to Nevidah to return civil order. Nevidah requests assistance from the US in deterring Califon aggression. Califon purchases overhead imagery of Nevidah from the UPRK.

Aragon: PRDA forces using their new equipment deploy to five forward major training areas and begin to conduct company and battalion level exercises. At least five forward logistics bases are complete. PDRA initiates reserve forces mobilization (normally thought to be a 90-day process). Additionally, a PDRA shore battery engages Cortinian shipping and PDRA Naval forces are observed conducting mine laying activity off the coast.

AUGUST 2000

US: Information obtained through intelligence and diplomatic channels indicate that if the PDRA/Cortina confrontation can not be averted diplomatically, the PDRA will be prepared to invade NET 15 September 00. Joint Task Force (JTF) Headquarters designated and activated. The JFMCC aboard the JCC Ship (USS Coronado) will be initially tri-hatted as the JTF Commander (Forward), the JFMCC and the JFACC. Because of the increasing activity in CINCWEST's AOR, a second AEF is alerted for deployment to Pacifica. The JCC Ship along with USMC Assault Follow-on Elements and surge amphibious shipping are deployed to the CINCWEST's AOR.   USAF elements conduct ISR of Pacifica and Aragon from CONUS. The US recalls Defense Attachés to the PDRA and Califon. The JCC Ship and the CVBG arrive in UPRK's Area of Influence (D-9), another CVBG is alerted for deployment and a Maritime Prepositioning Force (MEB) is alerted for deployment to the theater. On board the JCC are the JTF Commander (Forward), the JFMCC and forward elements of the JFACC, the JFLCC, the JSOTF and the JPOTF.   CINCWEST directs the JTF

Commander to establish a NO FLY ZONE over the island of Pacifica (D-8). AEF #2 deploys to Pacifica (D-4). JFACC responsibilities are transferred from afloat too ashore (D-4). JTF (Forward) functions are transferred ashore to the JTF (Main) (at JTASC?)(D-3) and CJCS issues execute order to CINCWEST. USMC follow-on forces alerted and arrive offshore. US Army follow-on heavy force are alerted for deployment. The second CVBG arrives in the AOR and is stationed in International Waters off the coast of the CPRK to discourage CPRK intervention.

Pacifica: Califon's VI Corps completes forward deployment. I Corps starts deployment along with Coastal Defense Batteries, a SCUD Brigade and two Tactical Air Groups. Coalition Forces stop at least one Califon cross border incursion. Califon expels all Coalition citizens. I Corps completes its forward deployment and UPRK advisors are observed with Califon forces down to at least the Battalion level. Califon continues cross border incursions.

Aragon: PDRA purchases and receives Exocet missiles and 20+ MRLs. CLF intensifies activities and initiates plans to take over key infrastructure facilities in support of the PDRA invasion. PDRA Army units conduct training at the battalion and brigade level followed by brigade and division level training and then move to occupy major training areas near the border. PDRA closes its international airport and restricts its airspace. CLF forces and other insurgents start massing around key elements of the Cortinian infrastructure. The Republic of Cortina formally requests US support. Cortinian regular forces deploy to defensive positions while a mobile reserve force occupies screening positions. PDRA engineers observed inspecting major bridges that provide access into Cortina.

SEPTEMBER 2000

US: JCC Ship transfers JFLCC responsibilities ashore to elements of the XVIII Airborne Corps (D+1) and retains responsibility as the MCC. A US Airborne Infantry Battalion and a US Light Infantry Brigade are alerted for deployment to the AOR. Additionally, a USMC Infantry Company training with the alerted US Light Infantry Brigade is attached to the brigade for deployment. Deployed AEFs conducts operations from forward bases and other USAF assets are employed from CONUS. US Heavy forces are alerted for follow-on mission. The JTF (Main) prepares to conducts NEO operations in Cortina, Nevidah or both (D-5). The JTF (Main) conducts Joint and Combined operations to seize the SG International Airport from insurgent forces and secure it for the reception of follow-on forces. Once secure, the Light Infantry Brigade air-lands at the same airport and takes up defensive positions in support of the Republic of Cortina Army. The US Airborne Infantry Battalion is withdrawn and staged for follow-on operations within the theatre (D+3). CINCWEST issues OPREP 3 report to the CJCS regarding Califon's attack on Nevidah (D-Day). CINCWEST issues OPREP 3 report to the CJCS regarding the PDRA's attack/invasion on the Republic of Cortina (D+4). The JTF conducts a

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counteroffensive operation ICW Cortina to expel the PDRA and reestablish the international border (o/a D+4). The MCC conducts STOM operations against operational objectives within the AOR. In response to Cortina request, the JTF (Main) executes a MOUT operation to retake the Department of Beauregards Capitol City of Alexandria from insurgent forces. CINCWEST directs the redeployment of the JCC ship to join the other CVBG off the coast of the UPRK.

Pacifica: Califon, with the assistance of UPRK Intelligence Agency, is measuring its possible response to the deployment of the US AEF to Nevidah. The are also aware of the current situation on Aragon, principally that PRDA readiness will only deteriorate from here, so an invasion is imminent. The are looking for US actions occurring on Aragon that will distract the US Commander so they can pursue their plans against Nevidah. A superbly executed offensive information warfare campaign provides the entire plan for a US Airborne invasion to secure Cortina's International Airport from the CLF. With that intelligence, Califon chooses that same date and time to execute its invasion of Nevidah. Coinciding with the US Airborne assault of the Cortinian International Airport, Califon launches its invasion into Nevidah.
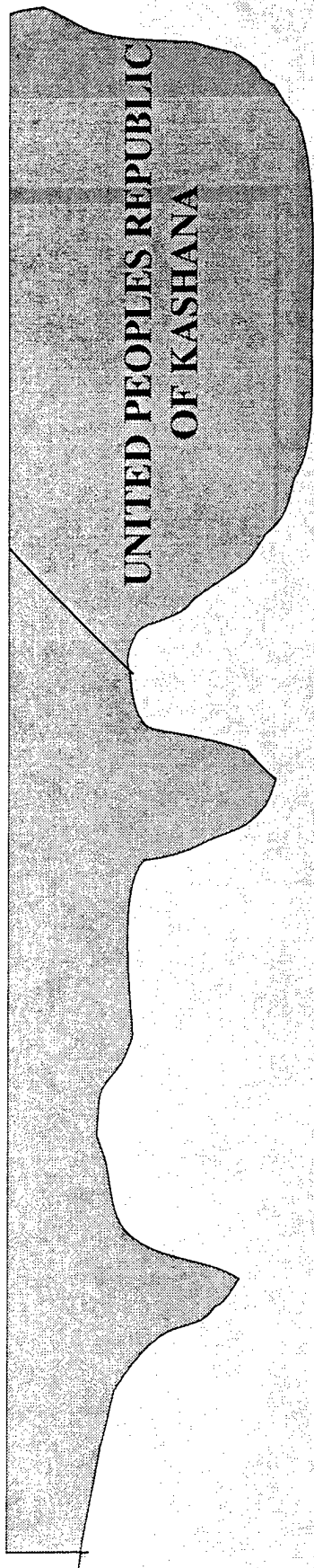
In response to the Califon Invasion, US and Nevidah Air Forces quickly established air superiority over the entire island. With the arrival of a US heavy brigade that fell in on the prepo set, the expectation of follow-on forces and the threat of a ground counter-offensive, Califon halted offensive operations and sought peace. Negotiations are underway that should lead to the restoration of the international borders in exchange for an agreement regarding the percentage of Nevidah mined mineral that will be shipped through Califon ports.

Aragon: The PDRA knows that the time is right to invade Cortina. Their forces are at their highest ever level of readiness. There is internal pressure to invade Cortina and they have the promise of support from the UPRK. The PDRA is also aware of the ongoing activity in Pacifica and are aware that a large USAF element has been deployed there in support of Nevidah. Given that activity is intensifying on Pacifica and the US has thus far focused all its effort on Pacifica, the PDRA sets its invasion date for 13 September 00 (o/a D + 4). The PDRA believes its plan is falling into place with the US busy supporting operations on Atlantica. The PRDA military launches a coordinated air, land and sea attack with the support of CLF forces in Cortina. The JTF (Main) ICW Cortina forces conducts Rapid Decisive Operations using US Army, US Navy, US Air Force and US Marine Corps assets to halt the PDRA attack. After halting the attack, the Joint and Combined force goes on the offense to expel PDRA forces and restore the international border.

The US led and Cortinian backed counter-offensive was successful in repelling the PDRA forces from Cortian and the restoration of the International Border. Subsequently a more moderate leader (still with ties to the UPRK) overthrew the PDRA government.

MILLENNIUM CHALLENGE '00
THE ROAD TO WAR
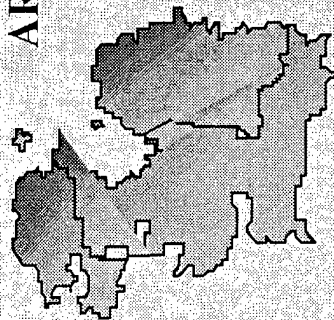
WORLDVIEW 2010

UNITED PEOPLES REPUBLIC OF KASHANA (UPRK)

ISLAND OF ARAGON

THE PEOPLES DEMOCRATIC REPUBLIC OF ATLANTICA (PDRA)

VICTORIA

CORTINA

NEVIDAH

ISLAND OF PACIFICA

WASHORGON

CALIFON
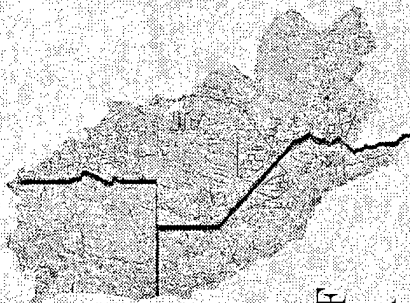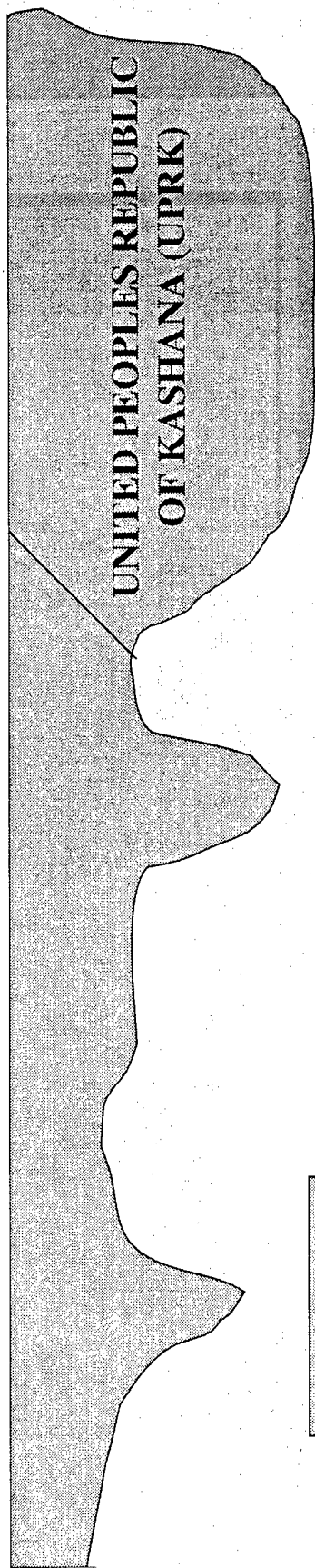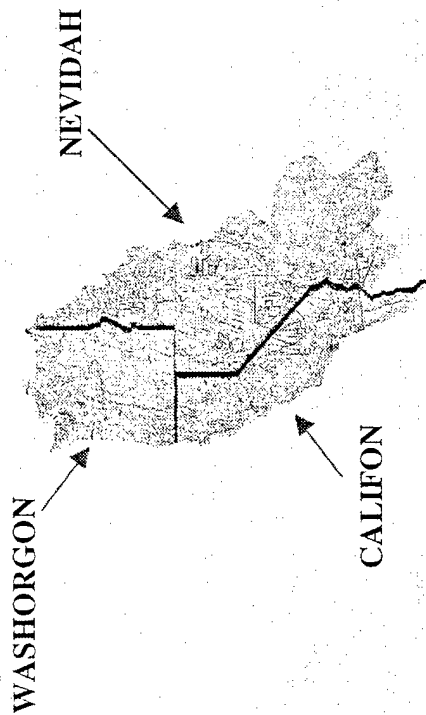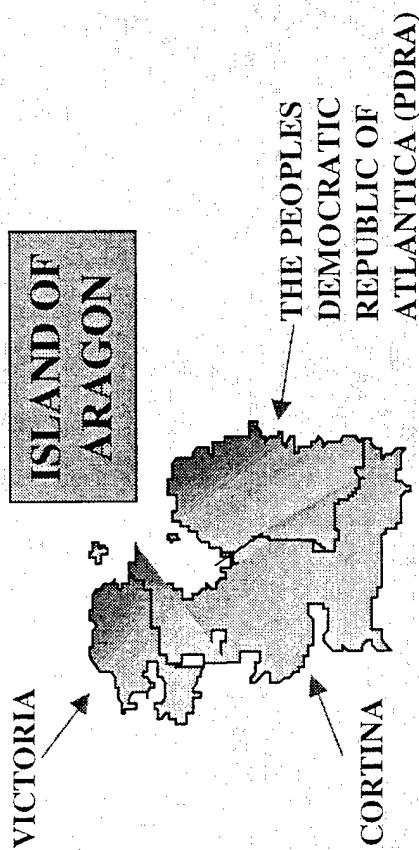
POLITICAL SITUATION

ECONOMIC SITUATION

MILITARY SITUATION

POLITICAL SITUATION CONTINUED

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ECONOMIC SITUATION.

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reaping the economic benefits of exporting its own minerals. The question of developing this port has re-ignited smoldering differences between the individual states of Nevidah and has led to significant unrest, fueled by the number of guest workers from Califon who are employed in the mining and mine product transportation system.

MILITARY SITUATION.

United States military presence in the region has dwindled from a high of 100,000 soldiers, sailors and airmen in the 1990s to a current level of 25,000. The 2010 National Military Strategy of Engage, Prepare and Respond has resulted in fewer forward land based deployed forces and more rotational sea based and land based exercise forces. With the vast majority of US forces based in CONUS, the US has invested heavily in strategic deployment assets. Additionally, each service has developed rapid deployment forces that provide the supported CINC with the ability to conduct Rapid Decisive Operations throughout the broad spectrum of war. As a result, the US is clearly the world's leader in the power projection capabilities.

KASHANA is a military peer of the United States with a 3 million-man standing defense force. It has a very capable land component, a traditional coastal defense navy with a developing blue water capability, and a robust air component, all of which are out fitted with advanced technologies. KASHANA has strategic sea based, air based and ground based nuclear forces, a ballistic missile offensive capability, a robust integrated air defense system and a national missile defense system.

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Additionally, it has the means to conduct limited power projection operations throughout its Area Of Influence and it has a limited Chemical/Biological weapons arsenal. KASHANA is a signatory to the Nuclear Test Ban Treaty and the Non-Proliferation Treaty.

Current US presence in Aragon: Defense Attaché in PDRA, Cortina and Victoria. Special Operations Forces are deployed throughout the island.

The Peoples' Democratic Republic of Atlantica's military is composed of the People's Revolutionary Army (PRA), the People's Revolutionary Navy (PRN), the People's Revolutionary Air Force (PRAF) and the People's Revolutionary Air Defense Force (PRADF). Its military forces are well led, but schooled in the doctrine of the former Soviet Union. The majority of its equipment was provided by the former Soviet Union, however it is expected to receive significantly improved equipment through the PDRK. The capabilities most sought by the PDRA include Multiple Rocket Launchers and Ballistic Missiles. The PRA has infantry, armor, airborne and special operations forces. The PRN is principally a coastal defense naval force but has been observed training in more open seas. In addition to its regular coastal defense forces it has a small submarine force and a limited offensive mining capability. PRAF ICW the PRADF is capable of marginally defending the airspace of the PDRA. It has fighter/bomber squadrons, transportation squadrons and attack/transportation

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helicopter squadrons. The PRADF (a sub-component of the PRAF) has multiple

fighter squadrons and missile regiments.

The Republic of Cortina military is composed of four branches, the Army (RCA), the

Navy (RDN), the Air Force (RCAF) and the Republic of Cortina National Gendarmerie

(RCNG). The RCA is the largest regular force followed by the RCAF and the RCN.

All regular forces are equipped with mostly western equipment and have recent

experience in counter insurgency operations but are believed ill prepared to conduct

combined operations in a medium intensity conflict. While all forces are well led,

they are for the most part, poorly trained and over extended. The RCA has nine

combat divisions (brigade size), five mobile groups, one para-comando group, three

coastal defense groups and five regional combat commands. The RCN is principally

a coastal defense navy. The RCAF has fighter, attack, search-attack and

transportation squadrons in addition to helicopter forces. The RCNG is 6,600 strong

and performs principally border, coastal and internal security duties. Unique to the

Republic of Cortina's military is the close association of its officer Corps to its

national political establishment.

The Victorian National Armed Forces (VNAF) are comprised of the Republic of

Victoria Army (RVA), Air Force (RVAF), and Navy (RVN). The military has capable

leadership, yet the overall VNAF is assessed as being poorly trained and not fully

committed to combating insurgency. The VNAF equipment comes primarily from the

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US and Great Britain and they are currently under-going a training program on new equipment. The RVA is very small and geographically dispersed. It has infantry, mechanized, artillery, air defense and aviation forces. The RVN is primarily a coastal navy. The RVAF possesses fighter squadrons, attack squadrons, transport and reconnaissance squadrons. Additionally, the Victorian National Police (5,000 man force) performs border, coastal and internal security duties.

Current US presence in Pacifica: Defense Attaché in Califon, Nevidah and Washorgon. Special Operations forces are deployed throughout the island. A brigade set of equipment pre-positioned in Nevidah.

The Peoples' Republic of Califon's military is highly regarded as the largest and best equipped on the Island of Pacifica. Over the years, Nevidah and Washorgon have all but ceded responsibility to Califon for defending their Island against external threats. As a result a very loose coalition existed among the islands three nation states regarding defense from external threats. Califon's Army boasts highly capable infantry, mechanized and armored divisions. Its Air Force can defend Califon's air space from all but a massive coordinated air attack, and it maintains effective deep strike, transport and reconnaissance forces. Califon's Navy is primarily a coastal defense force, but its vessels have recently spent more time steaming and exercising in open ocean areas. Califon has used its mineral and ore export income to purchase significant amounts of modern military equipment from KASHANA to include medium range ballistic missiles.

The Republic of Nevidah's defense strategy and force structure is based on defending key cities and mining centers against internal security threats. Its Army is small but experienced in small-unit operations. The Air Force has a minimal air defense capability but it is highly skilled in CAS and counter-insurgency warfare. The Nevidah navy is a small coastal defense force. Nevidah's military, though modest in size, is loyal and professional. Its leaders have received extensive training in US, Canadian and Western service academies.

The Confederation of Washorgon has traditionally worried little about off-island threats and has based its defense planning and military budgets on defeating low intensity ground and air threats. It has a Homeland Self-Defense Force (HSDF) that incorporates three military services. HSDF has responsibility for securing Washorgon's only major port, interdicting smugglers, and reducing illegal border crossings. The Army is primarily a light infantry force. The Washorgon Air Force performs surveillance, reconnaissance, CAS, and counter-insurgency missions. The Navy has no blue water capability.

UNITED PEOPLES REPUBLIC
OF KASHANA

ISLAND OF
ARAGON

PDRA

VICTORIA

CORTINA

The NSC meets to discuss possible US responses
to the deteriorating situations in Pacifica and Aragon.

The PDRA provides money and support to
the Cortinian Liberation Front (CLF).
Insurgent member of the CLF continues
to promote civil unrest in Cortina.

ISLAND OF
PACIFICA

NEVIDAH

WASHORGON

CALIFON

Califon intensifies its support to
insurgent militia groups in Nevidah.

UNITED PEOPLES REPUBLIC
OF KASHANA

ISLAND OF
ARAGON

PDRA

VICTORIA

CORTINA
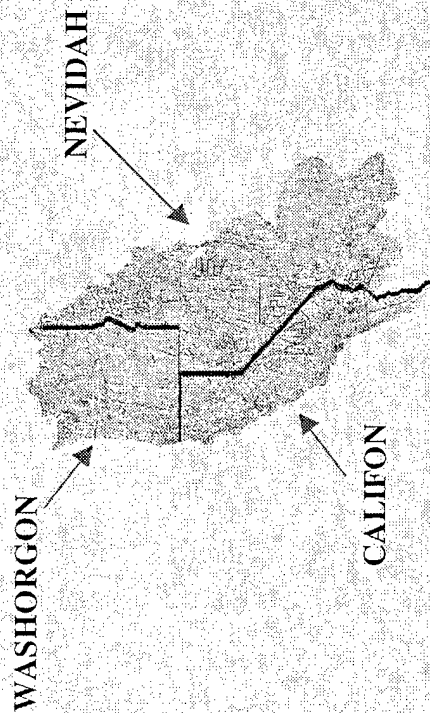
CJCS Issues Warning Order to CINCWEST.
The CINC and his staff review and update regional
contingency plans and provide COA's to the CJCS
regarding Nevidah's request.

The PDRA is observed establishing forward
supply bases and airfields .
The US Embassy in Cortina receives an
anonymous tip regarding PDRA invasion plans.

NEVIDAH

ISLAND OF
PACIFICA

WASHORGON

CALIFON
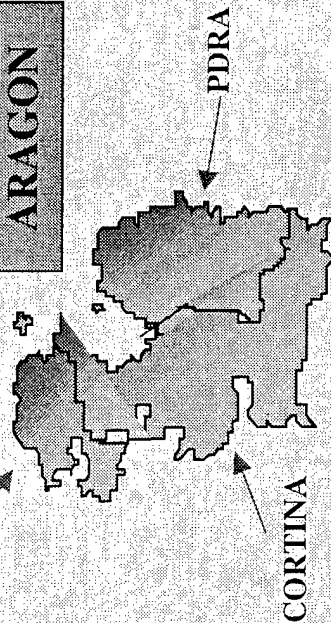
Nevidah's Government is overthrown
and an Interim Government is formed.
Nevidah requests assistance from
Coalition Forces to help restore order.
Nevidah also request US assistance.

UNITED PEOPLES REPUBLIC OF KASHANA

ISLAND OF ARAGON

PDRA

VICTORIA

CORTINA

ISLAND OF PACIFICA

WASHORGON

NEVIDAH

CALIFON
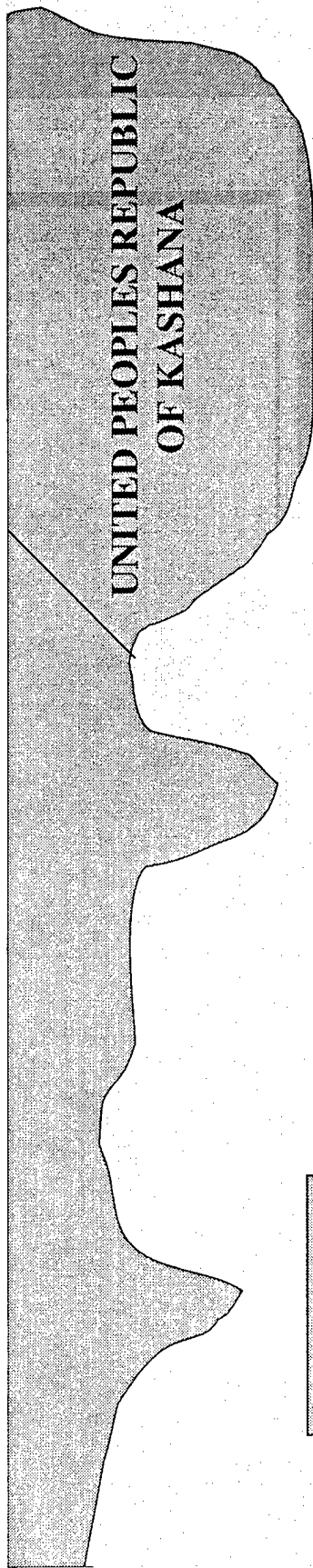
NCA and CINC establish regional priority, Pacifica then Aragon. CJCS Issues Planning order for Aragon and Deployment Order for 1 AEF to Nevidah. Fwd Deployed CVBG and ARG move into region.
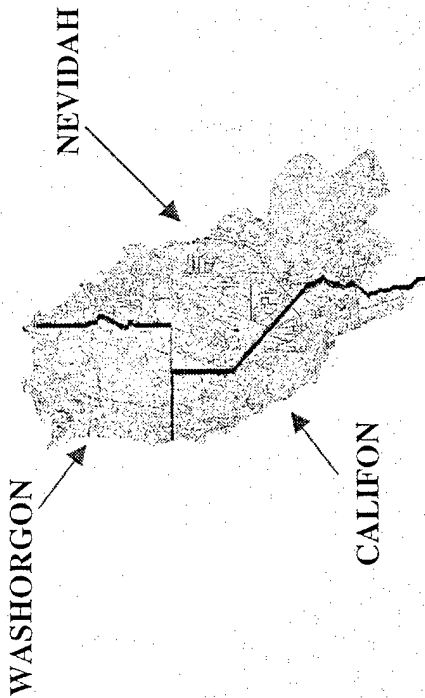
The PDRA deploys to five forward major training areas and conducts new equipment training. The PDRA initiates reserve mobilization (+90 days). The PDRA fires on Cortina shipping and are observed laying mines.
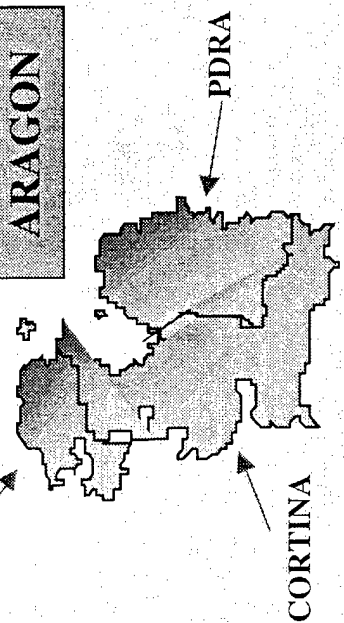
Coalition Forces deploy to Nevidah to assist with the restoration of civil order. Califon purchases overhead images of Nevidah from the UPRK
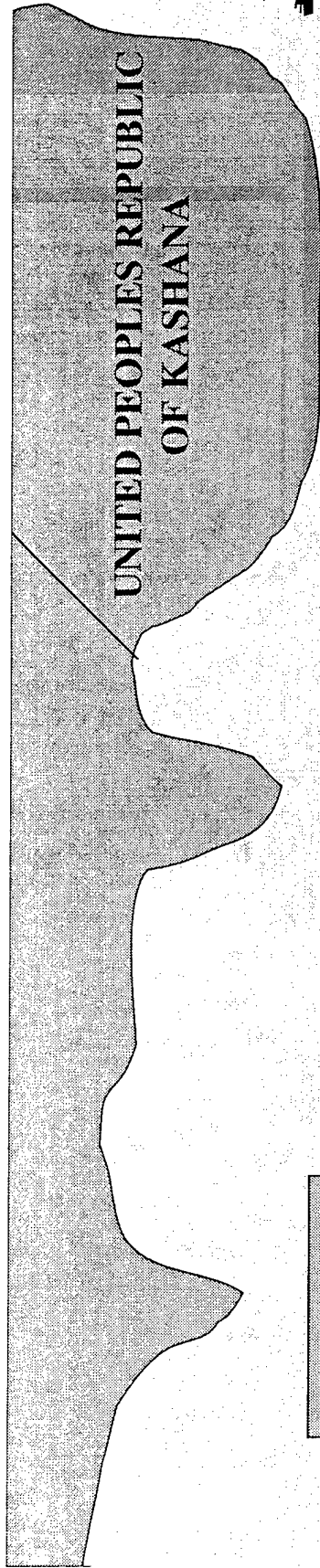
UNITED PEOPLES REPUBLIC OF KASHANA

ISLAND OF PACIFICA

WASHORGON

NEVIDAH

CALIFON

ISLAND OF ARAGON

VICTORIA

PDRA
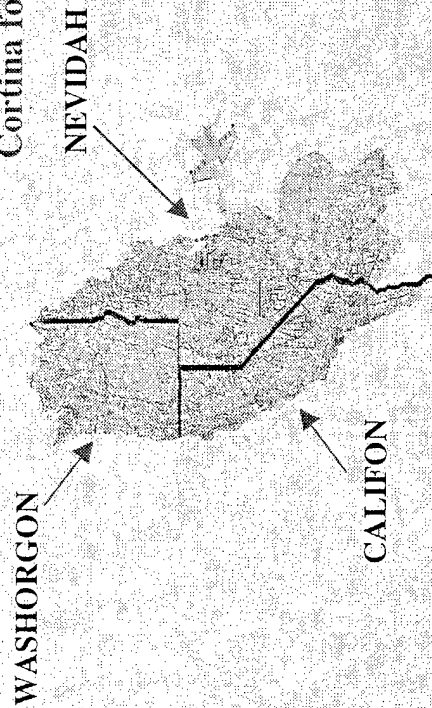
CORTINA

CINCWEST Activates JTF. A USMC Follow-On Assault Force is Deployed and 2nd CVBG alerted. 1st AEF arrives Nevidah and 2nd AEF alerted. Cortina formally request US support. Crisis Action Planning for Aragon begins .

Califon's VI Corps completes its forward deployment and its I Corps starts its forward deployment with Coastal Defense Batteries, a SCUD Brigade and two TAC Air Groups. UPRK advisors observed with Califon units. Civil unrest continues to escalate in Nevidah.

PDRA Logistics activity increases and PDRA Engineers are seen inspecting bridges along suspected invasion routes. Cortina believes invasion is with- in 30 days. The PDRA closes it international airport and restricts its airspace.

ISLAND OF ARAGON

ISLAND OF PACIFICA

UNITED PEOPLES REPUBLIC OF KASHANA

PDRA

VICTORIA

CORTINA
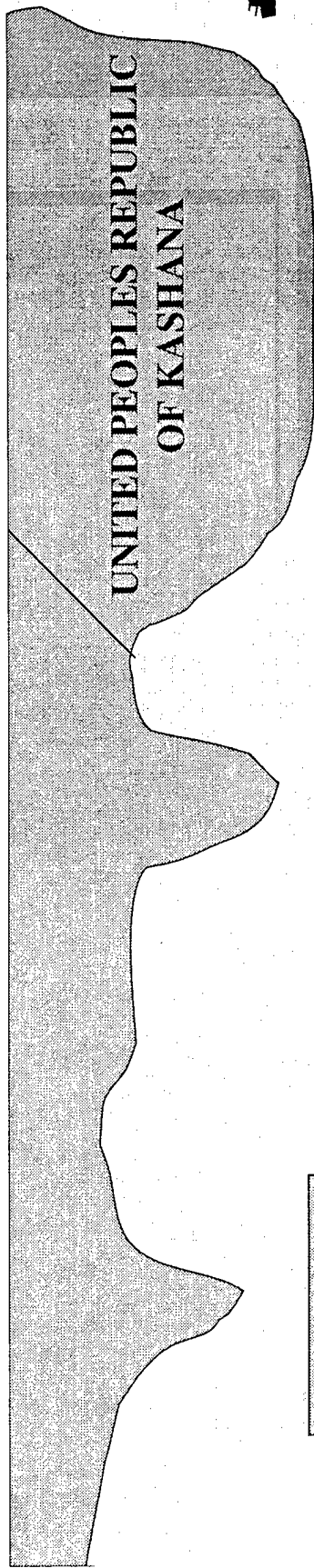
NEVIDAH

WASHORGON
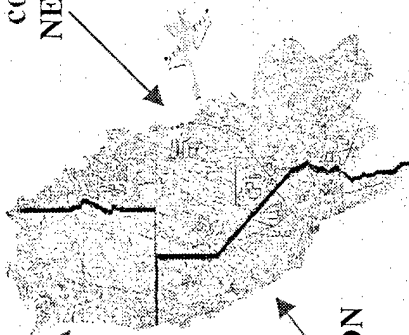
CALIFON

The JTF rehearses for NEO operations. Second AEF arrives in Nevidah. JTF establishes No-Fly zone over Pacifica. JTF Commander delegates primary responsibility for Pacifica to the JFACC. US Forces requested by Cortina continue to arrive in forward staging areas.

Extreme pressure throughout the PDRA to invade Cortina. Given the increase activity and US focus on Pacifica, the PDRA set its invasion date for 13 Sept (o/a D=4).

Califon is measuring responses to the US deployment of an AEF to Nevidah. Successful Offensive Info Warfare Campaign yields plans for US airborne invasion on Aragon planned for 9 Sept. Califon sets its invasion date for 9 Sept.

ISLAND OF
PACIFICA

WASHORGON

NEVIDAH

CALIFON
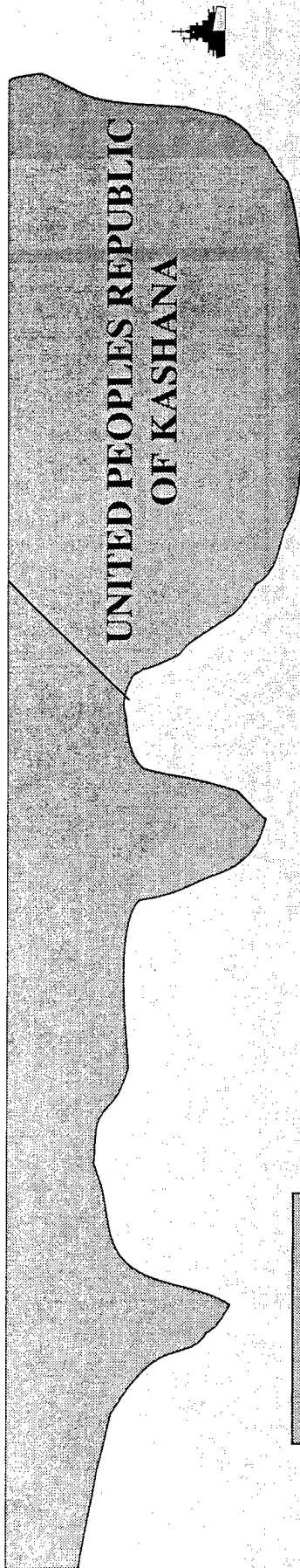
UNITED PEOPLES REPUBLIC
OF KASHANA
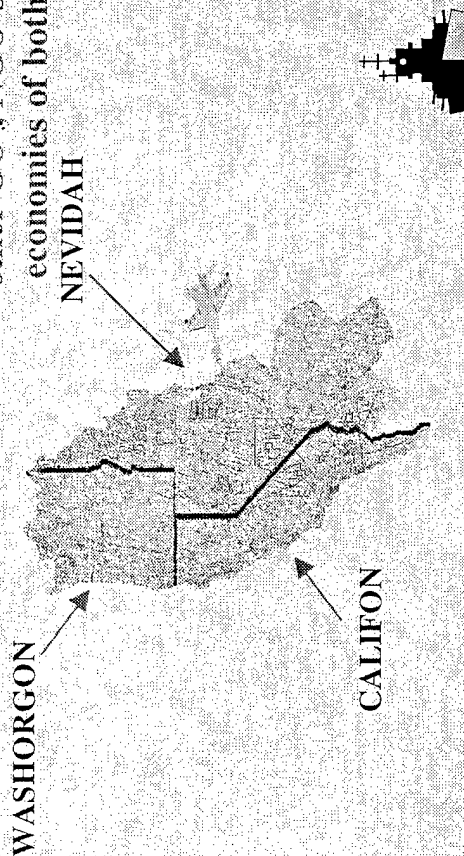
The CINC and the JTF Commander now switch focus to Peace Keeping/ Peace Enforcement Operations. Additionally, they work directly with other GO', NGO's and PO's to promote democracy and revitalize the economies of both islands.

VICTORIA

ISLAND OF
ARAGON

PDRA

CORTINA
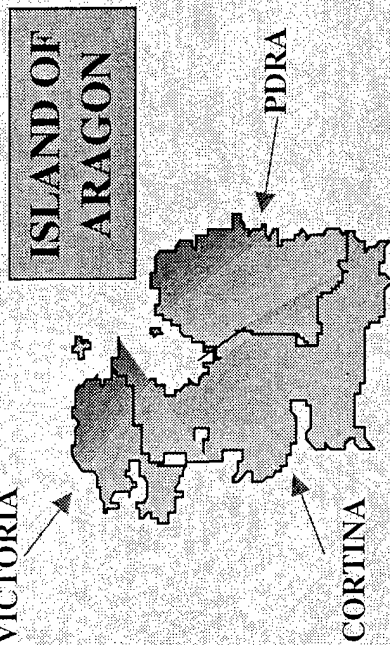
Califon's Invasion is halted but not before they control a larger share of the mineral fields. A third-party brokered peace plan calls for the restoration of the borders and further negotiations regarding the percentage of future Nevidah mined minerals to be shipped through Califon ports.

The PDRA invasion of Cortina is halted and international borders restored. Civil unrest in the PDRA leads to the overthrow of the hard line socialist government.

Theme	Actor	D-180 to D-121 13 Mar to 11 May	D-120 to D-91 12 May to 10 Jun	D-90 to D-61 11 Jun to 10 Jul	D-60 to D-46 12 Jul to 25 Jul	D-45 to D-31 26 Jul to 9 Aug	D-30 to D-16 10 Aug to 24 Aug
Aragon	PDRA	PDRA receives military & training support from Kashana	PDRA provides money and support to CLF	PDRA establishes forward log bases and airfields		D-40 PDRA shore battery engages Cortinan shipping	
	PDRA				PDRA prepares TBM infrastructure		D-20 PDRA Civil Engrs inspect bridges into Cortina
	CDF		Air Defense unit in Kashana for SA-10 training		SA-10 battalion announced but lacks equipment		
	PRA				PRA begins Co & Bn FTXs	D-45 PRA Bde & Bn FTXs	PRA log activity increases
	PRA					D-45 PRA mobilize reserves	
	PRN					PRN mining of coast observed	
	PRAF						D-23 Expect PDRA invasion within 30 days. Formally request US support
	Cortina		Cortina Liberation Front (CLF) promotes civil unrest in Cortina				Neutral merchant ship departs Kashana – suspected arms career
	CLF						
Pacifica	Nevidah	Nevidah announces final plans for port construction at Salt Lake		Nevidah's gov't overthrown, interim gov't formed	Nevidah requests US military assistance		Unrest near Las Vegas. Hoover Dam seized
	Nevidah	Civil unrest in Nevidah		Nevidah requests Coalition Forces to restore order	Coalition forces deploy in Nevidah		
	Nevidah	US/Nevidah Defense Treaty					
	Califon	Califon VI Corps begins deploy (D-120)	Califon provides covert support to militia groups in Nevidah		Califon TBM units deploy from garrison	D-35 Califon VI Corps closes, forces positioned 30nm from Nevidah border	D-30 Califon I Corps deploys toward Nevidah border
	Califon		Califon and Kashana sign an intel sharing agreement				Coastal Def Batteries, 2 TACAIR groups deploy
	Cal. Insurgents						
	Kashana		Califon and Kashana sign an intel sharing agreement	Kashana provides additional EW eqpt to Califon			
US	State Dept	US/Nevidah Defense Treaty		USEMB Cortina reports PDRA invasion plans			D-25 US Defense Attaches to PDRA and Califon recalled
	NCA		NSC meets to discuss Aragon / Pacifica problems		NCA / CINC prioritizes Pacifica over Aragon	D-45 Alert Order to CINCWEST for Aragon	
	CJCS			D-90 CJCS issues Warning Order to CINCWEST			
	CJCS			D-80 CJCS issues Planning Order for Aragon to CINCWEST	D-60 CJCS issues Alert Order for Pacifica to CINCWEST		
	CINCWEST	D-180 CINC Staff reboots deliberate plans		Provide COAs to CJCS regarding Nevidah request	NCA / CINC prioritizes Pacifica over Aragon	D-40 CINCWEST receives Execute Order for Pacifica	D-18 CINCWEST receives Execute Order for Aragon Defense Force
	CINCWEST			CINCWEST requests PE support for Pacifica	Forward deployed CVBG and ARG move into region	Virtually refine objectives	Target development completed
	CINCWEST			VCG established			Activates JTF-2
	CINCWEST			CINCWESTFLT receives Warning Order for 2 CVBG deployment			
	SOF	Covert SOF engaged in region					D-26 in Cortina
JDPO							
CROP							
PE							
JTF							
Army	ARW			ARW receives Warning order for Corps HQ, Lt Inf Div and Hvy Bde			ARW LNOs fwd deploy aboard MT WHITNEY?
	1/10 INF					D-40 1/10 Inf receives Alert Order	D-16 1/10 Inf and 3/325 Abn receives Deploy Order
	XVIII ABC						
	????						
	????						
	????						
	????						
	????						
	????						
	????						
	????						
Navy	Mt Whitney			NAVW receives Warning Order for 2 CVBG deployment	MT WHITNEY alerted for deployment		
	Mt Whitney						
	Mt Whitney					D-45 Deployed CVBG (TRUMAN) and ARG begin transit towards AOR	
	Truman						
	Inchon						3rd CVBG (STENNIS) alerted
	Stennis						2nd CVBG (Sim KITTY HAWK) and BELLEAU WOOD ARG deploy to Aragon
	Kitty Hawk						
	JFACC						
	????						
	????						
Air Force	ACC			ACC receives Warning Order for AEF deployment		ISR from CONUS	D-30 AEF closes in Nevidah. Local ISR begins
	AEF-1				AEF receives Alert Order	D-40 AEF-1 receives deploy order	Second AEF alerted
	AEF-2						
	C2TIG						
	Nellis Live Fly						
Marines	2nd ARG			D-90 CJCS Warning Order for OMFTS and STOM force			
	II MEF						
	????			MARW Receives Warning Order from			
	????						
	????						D-19 to D-16 Training at CLNC
	????						
	????						

Theme	Actor	Friday, 25 Aug	Saturday, 26 Aug	Sunday, 27 Aug
	Vignette			
Aragon	PDRA	Concerned that the CLF talks with the GOC have continued for one week and appear to be achieving common ground	Suspected of undermining the CLF and GOC talks	PDRA, CLF hard-liners and PNRM leaders meet and begin to form unified public front
	PDRA	Airspace over PDRA closed	Closes all border checkpoints and airspace	Harassing civilians attempting to move within area
	PDRA	Minister of defense announces major joint exercise, "Frontier Defense"	Minister of Defense announces that "Frontier Defense" FTX will commence in 20 days	Minister of Defense announces that "Frontier Defense" FTX will commence in 19 days
	PDRA CDF			
	PRA	Annual Div & Bde FTXs are continuing as planned	Annual Div & Bde FTXs are continuing as planned	Annual Div & Bde FTXs are continuing as planned
	PRA			
	PRA			
	PRA			
	PRN	KILO and ROMEO class submarines have left port and entered the Pacific	Littorals patrolling appears to continue as usual	KILO and ROMEO class submarines are observed patrolling Pacific
	PRN			Coastal defense cruise missile elint
	PRAF	Training flights over the Pacific are increasing	PRAF annual live fire exercises commence on Pensacola Island	Heightened level of PRAF reconnaissance flights observed in disputed zone
	Kashana	Increased rhetoric is focusing on the deployment of 2nd fleet to the AOR	Ambassador to the United Nations denounces the US 2nd fleet deployment to the area and requests UN resolution 196 be codified.	Announce that Kashana territorial waters extend 350NM from homeland -- demand enforcement of UN resolution 196.
	Cortina	CLF hard-liners are leaving the talks and denouncing the effort. Colonel _____, a motivational force, is the leading personality	RCA general staff orders all armories be secured and guarded 24 hours.	AMCITS harassed by demonstrators
	Cortina		Peaceful demonstrations outside AMEMB	Cortina General Staff announces any violations of airspace will be dealt with appropriately
	Cortina		Police capture three man team photographing / drawing Cortina MOD building	Unconfirmed reports of guerillas vic APOD
	Cortina			President announces CLF and GOC talks going well and is optimistic about impending solution
	RCA	All districts are on heightened alert and patrols are increased in disputed zone NE Cortina	General Staff maintains increased alert	
	RCA			
	RCN			Mine sighted in approach to harbor at Port Arthur
	IDPs			
	CLF	Small boat attack on Cortinian merchant ship	Neutral ship identified as suspected CLF arms carrier	CLF conducts surv/recon of APOD.
	CLF	CLF key leaders are conducting talks with GOC	No major activity being reported vic CLF caches and LOCs	CLF and GOC talks run into a problem over NSD issue and control of NE Arkana zone
	Victoria PNRM	Increased PNRM activity in the disputed zone NE Arkana	Increased PNRM activity around known caches is being reported by Victorian HUMINT sources. Arrests are being made of PNRM suspects.	Patrols seen operating vicinity Hot Springs
	Victoria PNRM	Denounces the CLF & Cortina talks	PNRM activity is increasing as determined by SIGINT. Contact with CLF hard-liners is occurring	Victoria Govt announces that the PNRM is not a sanctioned group and is being dealt with appropriately within Victorian territory
WHITE CELL	State Dept			
	AMEMB Cortina	Reports unsuccessful kidnapping attempt on Chief of Station	Issues travel advisories, stops CONUS hiring	Encourages departure of DOD / DOS civilians, validates EAP
	AMEMB Cortina	Increased threats and violence received		Rock throwing outside AMEMB
	NCA			
	NCA			
	CJCS	Issues WARNORD		
	CJCS			
	TRANSCOM			

	SOF / FID			Report submarine loading torpedoes at Memphis
EXPECTED ACTION	CINCWEST	Issues WARNORD		
	CINCWEST	Activates JTF-2 aboard MT WHITNEY		
	CINCWEST			
	JTF	Issues WARNORD		
	JTF			
	JTF			
Army	XVIII ABC			
	10 Mtn Div			
	10 Mtn Div			
	21st Div			
	ARW			
	1/10 INF			
	1/10 INF			
	1/10 INF			
	3/325			
	3/325			
	JAAP			
Navy	Mt Whitney			
	Mt Whitney	D-15 to D-13: JTF training		
	Truman CVBG			
	Inchon			
	Stennis CVBG	STENNIS BG departs for Pacifica		
	Ike CVBG			
	JFACC	JFACC AOC reachback to CONUS		
	JFMCC	Develop convoy plan	Plan maritime intercept operations	Develop mine detection and sweeping plan
	JFMCC			Refine ASW plan
	JFMCC			Add CDCM to target list and plan strike
	2nd ARG			
	2nd ARG			
Marines	MEB			
	MEB			
	LPTF			
Air Force	ACC			
	AEF-1			
	AEF-2			
	C2TIG			
	Nellis Live Fly			

Theme	Actor	Monday, 28 Aug		Tuesday
		AM	PM	AM
		1. PNRM INVASION		
	Vignette			
Aragon	PDRA		SIGINT indicates increased communications activity between national and operational level commands.	Prime Minister, as Supreme Commander of the Armed Forces, states his optimism in the results expected in the forth coming Army level exercise.
	PDRA			PDRA FTXs are progressing as scheduled, HUMINT reporting increased logistics activity is occurring in the western zones.
	PDRA			
	PDRA CDF			
	PRA	Annual Div & Bde FTXs are continuing as planned		PRA units remain on alert status on the border
	PRA		All units on the PDRA/Cortina border put on heightened alert.	
	PRA	Imagery reflects absence of SCUD C units from garrison		
	PRA			
	PRN			Increased activity in eastern port facilities
	PRN			
	PRAF	Live fire exercises continue as planned		
	Kashana	Defense Minister announces major naval exercises to commence		Kashana Navy activity increasing in the southern ports
	Cortina		GOC alerts NORFOR and orders Strike Force to Arkana to oppose PNRM incursion	
	Cortina		Requests additional FID advisors for RCA 3rd Infantry Div	
	Cortina			Defense Minister assures AMEMB situation well in hand
	Cortina	Weapons cache found vic APOD.		
	RCA	3rd Inf Div reports sporadic fighting with CLF units		3rd Inf Div requests reinforcements
	RCA		Doubles border patrols	
	RCN			
	IDPs	Civilians report ethnic cleansing of the Hot Springs area and are reporting brutality by the PNRM		Civilians are fleeing the Hot Springs area and moving southeast within Arkana
	CLF			
	CLF			
	Victoria PNRM	2 battalions attack across Cortina border		
	Victoria PNRM	Claims successful ambush of RCA patrol in Arkana		Homes of prominent Arkana citizens loyal to GOC burned
WHITE CELL	State Dept			
	AMEMB Cortina	Unexploded car bomb found outside AMEMB		Assesses situation as under GOC control and does not support additional FID
	AMEMB Cortina	Requests USMC Security Team (FAST)		
	NCA			Downplays danger, provides restrictive ROE
	NCA			Authorizes FAST
	CJCS			
	CJCS			
	TRANSCOM			

3

		FID forces chop to JTF-2		FID reports situation in Arkana deteriorating, requests ROE change
	SOF / FID			
EXPECTED ACTION	CINCWEST	(V1) Initiates CAP	(V1) Issues FRAGO to WARNORD	(V1) Requests additional FID
	CINCWEST			
	CINCWEST			
	JTF			
	JTF			
	JTF			
Army	XVIII ABC			
	10 Mtn Div			
	10 Mtn Div			
	21st Div			
	ARW			
	1/10 INF			
	1/10 INF			
	1/10 INF			
	3/325			
	3/325			
	JAAP			
Navy	Mt Whitney			D-15 to
	Mt Whitney			
	Truman CVBG			
	Inchon			
	Stennis CVBG			
	Ike CVBG			
	JFACC			
	JFMCC			
	JFMCC			
	JFMCC			
	2nd ARG			
	2nd ARG		D-15 to D-10: Enroute to Aragon	
Marines	MEB			
	MEB			
	LPTF			D-12 to D-10: Final Training at NOLA
Air Force	ACC			
	AEF-1			
	AEF-2			
	C2TIG		System and Process Training	
	Nellis Live Fly			

Theme	Actor	, 29 Aug PM	Wednesday, 30 Aug AM	PM
	Vignette		2a. NEO	
Aragon	PDRA			CNN reported this morning in an interview with General staff, that preparations for PDRA major joint exercises are proceeding as announced and Western leaders are informed not to view this as a provocation.
	PDRA		No significant activity in MZs I - III, except logistics transports appear to have increased.	
	PDRA			
	PDRA CDF			
	PRA		Logistics activity (fuelers, low boys) have increased on MSRs east to west	
	PRA		Border patrols have increased and are reported as a preventive measure to the recent PNRM activities.	
	PRA			
	PRA			
	PRN		Romeo and Kilo class submarines have not returned to ports in the east.	
	PRN			
	PRAF		training exercises over the Pensacola island have continued	
	Kashana			UN Ambassador continues to argue for passage of resolution 196 preventing US operations within disputed AOR
	Cortina	Cortinian forces deploy to defensive positions in eastern region		Curfew imposed in Hot Springs
	Cortina	GOC TV broadcast reassures citizens situation in Arkana well in hand		GOC troops surround the disputed zone with mechanized and light infantry forces and continue to fight the PNRM forces in Arkana
	Cortina			
	Cortina		GOC is reporting ethnic cleansing activities being conducted by the PNRM within the disputed zone.	
	RCA		Heavy fighting with PNRM near Victoria border	
	RCA	Company ambushed and overrun with heavy casualties	Cortina Army general is seen on CNN reporting that he is satisfied with the ground he has been able to hold	
	RCN			
	IDPs			Civilians flee fighting in Arkana into Shreveland
	CLF			
	CLF		Hard-liners are organizing CLF forces in Arkana and attempting to mobilize against GOC forces.	
	Victoria PNRM	PNRM are claiming victory in unification efforts of the Arkana zone and demand NSD rights		PNRM continue to push south and have gained ground deeper into the disputed zone
	Victoria PNRM		Hot Springs Police Chief killed in drive-by shooting	
WHITE CELL	State Dept		Califon recommends coalition citizens leave Califon	
	AMEMB Cortina			
	AMEMB Cortina			
	NCA		Orders prep for evacuation of AMCITs from Hot Springs	
	NCA			
	CJCS		Authorizes additional FID	
	CJCS		Issues WARNORD MOD for NEO of AMCITS from Hot Springs	
	TRANSCOM			

	SOF / FID			
EXPECTED ACTION	CINCWEST		(V2a) issues FRAGO to WARNORD	
	CINCWEST			
	CINCWEST			
	JTF			
	JTF			
	JTF			
Army	XVIII ABC			
	10 Mtn Div			
	10 Mtn Div			
	21st Div			
	ARW			
	1/10 INF		D-10 Established at ISB	
	1/10 INF			
	1/10 INF			
	3/325			
	3/325			
	JAAP			
Navy	Mt Whitney	D-6: MT WHITNEY Under way JTF-2, JFACC Afloat, JFMCC(X), JSOTF, ARFOR		
	Mt Whitney			
	Truman CVBG	D-11 to D-9: TRUMAN live fly		
	Inchon			
	Stennis CVBG			
	Ike CVBG			
	JFACC		CSAR	
	JFMCC			
	JFMCC			
	JFMCC			
	2nd ARG		V-22 ditches off shore near Cortina - PDRA border	
	2nd ARG			
Marines	MEB			
	MEB			
	LPTF			
Air Force	ACC			
	AEF-1			
	AEF-2			
	C2TIG			
	Nellis Live Fly			

Theme	Actor	Thursday, 31 Aug		Friday, 1 Sep
		AM	PM	
	Vignette			
Aragon	PDRA	PDRA President denounces the ethnic cleansing activities and suspects media hype rather than truth as being reported		PAUSEX
	PDRA			
	PDRA			
	PDRA CDF			
	PRA	Increased activity is being reported in the motor pools of MZs I, II, & III		
	PRA	Border activities have increased and patrols indicate a more aggressive attitude to civilians crossing into Cortina.		
	PRA	SRBM Scud C is identified on TEL southeast of PDRA capital		
	PRA	SRBM Scud C transloader moving out of garrison		
	PRN	White shipping activity increases off the eastern coast of Aragon		
	PRN			
	PRAF			
	Kashana	Kashana officially files complaint with the UN for white ship boarding within Kashana AOR.		
	Cortina	Cortina reports increased activities on their eastern border and have alerted garrisons vicinity Monroe	Begin setting up refugee camps around Shreveport	
	Cortina	GOC requests HA support from US		
	Cortina			
	Cortina			
	RCA			
	RCA			
	RCN			
	IDPs	Civilians reporting ethnic cleansing in the northern zone of Arkana		
	CLF	Mortar attacks against APOD; HUMINT reports build-up of insurgent forces in vicinity.		
	CLF	Increased arms traffic from Pine Bluff to Arkana		
	Victoria PNRM	PNRM continue attacks in the north but appear to have been stopped by GOC forces north of Hot Springs		
	Victoria PNRM	A key leader captured by RCA		
WHITE CELL	State Dept			
	AMEMB Cortina			
	AMEMB Cortina			
	NCA		Cancels Hot Springs NEO	
	NCA			
	CJCS		Cancels Hot Springs NEO	
	CJCS			
	TRANSCOM			

	SOF / FID			
EXPECTED ACTION	CINCWEST	(V1) COA Brief		
	CINCWEST	Stands up JTF XVIII for liaison with JTF-2 with DIRLAUTH		
	CINCWEST		(V2a) Cancels Hot Springs NEO	
	JTF			
	JTF			No fly zone established over Pacifica
	JTF			
Army	XVIII ABC	D-9: ARFOR LNOs to MT WHITNEY		
	10 Mtn Div			
	10 Mtn Div			
	21st Div			
	ARW			
	1/10 INF			
	1/10 INF			
	1/10 INF			
	3/325			
	3/325			
	JAAP			
Navy	Mt Whitney			
	Mt Whitney			
	Truman CVBG			D-8: TRUMAN sent to Kashana
	Inchon			
	Stennis CVBG			
	Ike CVBG	USS Mahern hits mine off New Orleans, dead in the water		US Navy checking white shipping bound for PDRA ports, one boarding party finds PGM parts designed for SRBMs
	JFACC			
	JFMCC			
	JFMCC			
	JFMCC	Modify MCM plan		
	2nd ARG			
	2nd ARG			
Marines	MEB			Arrive vicinity Gulfport
	MEB			
	LPTF			
Air Force	ACC			
	AEF-1			
	AEF-2			
	C2TIG			
	Nellis Live Fly			

Theme	Actor	Saturday, 2 Sep	Sunday, 3 Sep	Monday, 4 Sep
	Vignette	LABOR DAY WEEKEND		
Aragon	PDRA	PAUSEX	PAUSEX	PAUSEX
	PDRA			
	PDRA			
	PDRA CDF			
	PRA			PRA units occupy MTAs
	PRA			
	PRA			
	PRA			
	PRN			
	PRN			
	PRAF			
	Kashana			
	Cortina			
	Cortina			
	Cortina			
	Cortina			
	RCA			
	RCA			
	RCN			
	IDPs			
	CLF			
	CLF			
	Victoria PNRM			
	Victoria PNRM			
WHITE CELL	State Dept			Coalition citizens complete evacuation from Califon
	AMEMB Cortina			
	AMEMB Cortina			
	NCA			JFMCC(X) provides direct support naval fires to JTF-18
	NCA			
	CJCS			JFMCC(X) for experimental support will rely on the JFACC(-) for ATO flt schedule
	CJCS			
	TRANSCOM			

	SOF / FID	SOF insertion into Aragon		
EXPECTED ACTION	CINCWEST			
	CINCWEST			
	CINCWEST			
	JTF			MT WHITNEY transfers JFACC ashore
	JTF			
	JTF			
Army	XVIII ABC			D-5. EXFOR OPORD issued
	10 Mtn Div			
	10 Mtn Div			
	21st Div			
	ARW			D-5. Aragon ATO provided by the JFACC (-)/JFMCC(X).
	1/10 INF			D-5 to D-4
	1/10 INF			
	1/10 INF			
	3/325			
	3/325			
	JAAP			
Navy	Mt Whitney			D-5. JTF-2 JFACC Transition
	Mt Whitney			D-5. JFMCC(X) (for exp spt) will rely on JFACC(-) for Aragon ATO
	Truman CVBG			
	Inchon			D-5 INCHON begins MCM
	Stennis CVBG			
	Ike CVBG			
	JFACC			
	JFMCC	D-11 to D-10: ASU / ASW / MCM / Air Defense		
	JFMCC			
	JFMCC			
	2nd ARG			
	2nd ARG			D-5. 2nd ARG arrives offshore
Marines	MEB			
	MEB	D-10 to D-3: II MEF on MT WHITNEY (D-15 to D-3 if JFMCC)		
	LPTF			
Air Force	ACC			
	AEF-1			
	AEF-2			D-5. AEF-2 closes, JFACC transferred ashore
	C2TIG			
	Nellis Live Fly			

Theme	Actor	Tuesday, 5 Sep		Wednesd
		AM	PM	AM
	Vignette	1. PNRM INVASION 2b. NEO		3. MISSILE THREAT
Aragon	PDRA		Mobile SA-10 TELs and missiles offloading at Memphis seaport	35 Kashana SA-10 advisers arrive at Memphis IAP
	PDRA	Report of Taipo-Dong (MR TBM) containers on pier at Tuscaloosa		
	PDRA	We will need to begin feeding the two battalions that will cross the IBL to support the MARFOR STOM event on 7 & 8 Sept		
	PDRA CDF			SA-10s moved to 1st AD Msl Regt at Memphis
	PRA	SRBM Scud C transloader moving out of garrison		SRBM is reported continues to move south of Memphis
	PRA	PDRA FTXs are progressing as scheduled; HUMINT reporting increased logistics activity is occurring in the western zones.		PDRA FTXs are progressing as scheduled, HUMINT reporting increased logistics activity is occurring in the western zones.
	PRA			
	PRA			
	PRN	White shipping continues to flow towards east coast of PDRA		PRN sorties
	PRN			
	PRAF	PRAF is ordered to overfly international waters and maintain CAP of the littorals		PRAF maint standdown
	Kashana			Kashana vows to provide the moral and ethical support to the Californians and PNRM freedom fighters.
	Cortina			GOC continues preparations for defense of the IBL
	Cortina	GOC puts the RCA on increased alert		GOC continues pressure in Arkana, plans a push to liberate Hot Springs
	Cortina			GOC prepares to mobilize an additional regiment for commitment against PNRM
	Cortina			
	RCA		3rd infantry division reporting engaged with 2 PNRM battalions and have contained the fight in the disputed zone.	3rd Infantry reports having contained the PNRM attack south of Hot Springs
	RCA		Increased readiness is ordered in eastern garrisons	
	RCN			
	IDPs	Civilians are leaving the Mississippi Valley areas and Monroe for more western cities		Increased activities in the Mississippi Valley have caused civilians to leave the border areas due to the pending conflict
	CLF	CLF pressure continues in Arkana causing civilians to flee south into Shreveland		
	CLF			Threatens APOD, attack Hot Springs airport
	Victoria PNRM		Claim victory in Hot Springs and vow to reach PDRA by fall	PNRM must pull back north of Hot Springs due to the heavy losses and rebuild combat power.
	Victoria PNRM			
WHITE CELL	State Dept			
	AMEMB Cortina			
	AMEMB Cortina			
	NCA			
	NCA			
	CJCS	Issues WARNORD MOD for NEO of AMCITS from Hot Springs		
	CJCS			
	TRANSCOM			

	SOF / FID			
EXPECTED ACTION	CINCWEST	(V2b) issues FRAGO to WARNORD		(V3) initiates planning
	CINCWEST			Noon. Deactivates JTF-2, activates JTF-XVIII
	CINCWEST			
	JTF			JTF-2 / JTF XVIII transition coordinatio
	JTF			
	JTF			
Army	XVIII ABC			
	10 Mtn Div	Division Order issued		Follow-on heavy force alerted (3rd ID)
	10 Mtn Div			
	21st Div	Becomes ARFOR		
	ARW			
	1/10 INF	: ISB Ops		
	1/10 INF			
	1/10 INF			
	3/325			D-4 to D-2 Condu
	3/325			
	JAAP			D-3 JAAP insertion
Navy	Mt Whitney	D-4 JSOC C2 afloat transitions to Ft Chafee		
	Mt Whitney			
	Truman CVBG			
	Inchon			
	Stennis CVBG			
	Ike CVBG			
	JFACC	Amend air defense plan		
	JFMCC			
	JFMCC			
	JFMCC			
	2nd ARG			
	2nd ARG			
Marines	MEB	MCM planning and execution with USN		
	MEB			
	LPTF	Conduct RSTA and attack of critical targets in PDRA		
Air Force	ACC			
	AEF-1			
	AEF-2	D-4 AEF-2 Closes		
	C2TIG	D-9 to D-1: Dynamic Vignettes/Defensive Ops		
	Nellis Live Fly			

Theme	Actor	...ay, 6 Sep PM	Thursday, 7 Sep AM	Thursday, 7 Sep PM
Aragon	PDRA	PDRA govt announces it will close its borders to all civilian traffic in response to the aggressive actions of the GOC in the east valleys. "They are provoking us," states the Minister of Defense.	Increased maneuver activity is reported near the international border line (IBL). Annual FTXs are reported officially as the activity.	IBL area is reported as precarious and unstable.
	PDRA	Multiple transloading and logistics sites have been reported south of Memphis.		Continue with FTXs as planned
	PDRA			
	PDRA CDF			
	PRA	Scuds reported moved to 41st Arty Bde at Greenwood; attempting to confirm	PDRA continue to conceal the location of SRBMs	Creating problems at the border crossing points, intra-state commerce has slowed significantly
	PRA	PDRA FTXs are progressing as scheduled, HUMINT reporting increased logistics activity is occurring in the western zones.	PDRA FTXs are progressing as scheduled, HUMINT reporting increased logistics activity in western zones.	
	PRA			
	PRA			
	PRN	Elements reported near Pensacola Island.	PRN patrolling of the littorals continues	
	PRN			
	PRAF		PRAF SLAR profiles along entire border region	Possible PRAF cross-border incursions
	Kashana	Increased port activities involving white shipping vessels.		Continue to support revolutionary efforts through white shipping
	Cortina	GOC reporting that Cortina civilians fleeing the border areas are being harassed and stripped of all valuables prior to crossing the border	MSRs clogged with IDPs	Report too many IDPs and not enough transport assets
	Cortina		GOC working to move IDPs as quickly as possible to the west.	GOC report the hard-line CLF is causing problems in the IDP camps
	Cortina		IDP camps lack supplies	
	Cortina			
	RCA	Eastern defense units reporting increasingly large flows of refugees heading west and are creating logistics resupply problems.	Continues to prepare defenses in the east	Attempting to assist with IDPs while continuing defensive preparations
	RCA		Mobilize reserves	
	RCN			
	IDPs	Civilian IDPs are leaving the Mississippi Valley in large numbers to get out of the way of combatants	IDP camps are poorly resourced creating unrest and health problems are imminent	IDP camps reported to be filling to excess of capabilities
	CLF	Hard-liners are reported to be infiltrating the civilian masses and causing dissension and unrest against GOC	Attempting to cause unrest among IDPs to incite violence against the GOC	Creating unrest in the east
	CLF		CLF and GOC talks are experiencing difficulty	Begin attacks in the southwest, vicinity Alexandria
	Victoria PNRM	PNRM begin a second push towards Hot Springs with the assistance of hard-line CLF forces	Continue to hold in the north and are attempting to regroup for the next push	
	Victoria PNRM			
WHITE CELL	State Dept			
	AMEMB Cortina			
	AMEMB Cortina			
	NCA			
	NCA			
	CJCS			
	CJCS			
	TRANSCOM			

(Vignette row appears as blackened/redacted area)

	SOF / FID			
EXPECTED ACTION	CINCWEST			
	CINCWEST	Begin planning for hostile NEO		
	CINCWEST			
	JTF	n.		
	JTF			
	JTF			
Army	XVIII ABC			D-2. JTF XVIII Stands Up
	10 Mtn Div			
	10 Mtn Div			
	21st Div			
	ARW			
	1/10 INF			
	1/10 INF			
	1/10 INF			
	3/325	ct prep for combat		
	3/325			
	JAAP			
Navy	Mt Whitney			
	Mt Whitney			
	Truman CVBG			
	Inchon			
	Stennis CVBG			
	Ike CVBG			
	JFACC			
	JFMCC			
	JFMCC			
	JFMCC			D-2 to D-1: S
	2nd ARG			
	2nd ARG			
Marines	MEB			
	MEB			
	LPTF		Land	Seizes Camp Shelby
Air Force	ACC			
	AEF-1			
	AEF-2			
	C2TIG			
	Nellis Live Fly			

| Theme | Actor | Friday, 8 Sep | | Saturda |
		AM	PM	AM
	Vignette		D-DAY ACTIVITIES	
Aragon	PDRA	Continue their build up of ground activities in the west. Their intentions continue to be to support the PNRM efforts in the north while supporting the CLF activities in the south of Cortina		
	PDRA	Continue claims of non-aggression		
	PDRA	PDRA General Staff complain about the RCA deploying to frontier positions and call it a provocation		
	PDRA CDF	Reported to have chemical producing capability on Aragon		
	PRA	Continued preparations for the army level FTX cause increased unrest.		
	PRA	Initial movements of signature ADA radars to the western ranges begins.		
	PRA	Skip echelon comms reported		
	PRA			
	PRN	Remains at sea and is actively patrolling PDRA littorals.		
	PRN			
	PRAF	Continue cross border incursions and blame Cortinian/US NAVAID spoofing		
	Kashana	Foreign Minister asks for calm in the region and calls for resolution of problem by United Nations		
	Cortina			
	Cortina			
	Cortina			
	Cortina			
	RCA	Eastern garrisons continue deployment to defensive positions		
	RCA			
	RCN			
	IDPs	Hundreds of IDPs are reported moving west towards Shreveport as military activities increase in the east		
	CLF	CLF hard-line faction have begun combat activities in the south west of Alexandria		
	CLF			
	Victoria PNRM	PNRM forces have been stalled north of Hot Springs by GOC forces.		
	Victoria PNRM			
WHITE CELL	State Dept			
	AMEMB Cortina			
	AMEMB Cortina			
	NCA			
	NCA			
	CJCS			
	CJCS			
	TRANSCOM			

	SOF / FID			
EXPECTED ACTION	CINCWEST	(V3) COA Brief		
	CINCWEST			
	CINCWEST			
	JTF			
	JTF			
	JTF			
Army	XVIII ABC			
	10 Mtn Div			
	10 Mtn Div			
	21st Div			
	ARW			
	1/10 INF			
	1/10 INF			
	1/10 INF			
	3/325		D-1: Enroute Mission Update (P-5)	
	3/325		D-1: EMPRS, Airborne assault to seize airfield (P-Hour 2000, seize lodgment P+12)	
	JAAP			
Navy	Mt Whitney			
	Mt Whitney			
	Truman CVBG			
	Inchon			
	Stennis CVBG			
	Ike CVBG			
	JFACC			
	JFMCC			
	JFMCC			
	JFMCC	TOM Support		
	2nd ARG			
	2nd ARG			
Marines	MEB			
	MEB			
	LPTF	Land	Seize Camp Shelby	
Air Force	ACC			
	AEF-1			
	AEF-2			
	C2TIG			
	Nellis Live Fly			

Theme	Actor	y, 9 Sep PM	Sunday, 10 Sep AM	PM
	Vignette	1. PNRM INVASION	4. HUMANITARIAN ASSISTANCE	5. DELAY OF FORCES 6. CHEM WPNS
Aragon	PDRA	PDRA maintain that they are a peaceful people and do not wish to engage in conflict but maintain their right to NSD of all their protectorates on the Island	Reported to have cleared all western villages of Cortinians and sent them west to the IBL for processing and repatriation	Continue preparations for major FTXs and maintain that it is not to be considered a provocation
	PDRA	Continued army-level FTX preparations are observed		
	PDRA	Increased activity in the western ranges has caused many civilian problems		
	PDRA CDF			Claim they have not provided the PNRM with any chemical capability
	PRA	Check points along the IBL remain closed and civilians continue to move through as they are cleared	Ground activities in the western ranges continues	
	PRA	Increased communications and radar infrastructure moving into the western ranges is reported		
	PRA	Border forces are harassing Cortinians crossing the border due to increased military activities		
	PRA			
	PRN	Continues patrolling of the littorals inside the 12 mile international limit	Remains at sea	
	PRN			
	PRAF	Continue CAP along the IBL and over the littorals	Continued patrols	
	Kashana			
	Cortina	Forces are on heightened alert in the southwest vic Alexandria	IDPs overwhelm GOC resources, GOC requests US assistance	GOC unsure of how to handle the chemical problem
	Cortina		GOC complains to NGOs and International community for the blatant ethnic cleansing that is going on in western PDRA	GOC requests US assistance with suspected chem weapons cache
	Cortina		GOC reports they have found a chemical cache south east of Hot Springs	
	Cortina			
	RCA	Forces have quelled the increased violence vicinity Alexandria and arrested known hard-line CLF members	RCA forces are attempting to assist in the processing of Cortinians and other refugees at the IBL	RCA continues defensive preparations in the eastern positions
	RCA		RCA 3rd Division reports finding a suspected chemical weapons cache	
	RCN			
	IDPs	IDPs and some refugees continue their movement along LOCs towards the west	IDPs and refugees continue to move west towards safer areas	
	CLF	CLF hard-liners are reported to be infiltrating the IDP camps and capable of causing unrest in the camps	No major activities reported	
	CLF			
	Victoria PNRM	Continue to defend north of Hot Springs	Continue to hold in the north and rebuild for the next offensive action	
	Victoria PNRM			
WHITE CELL	State Dept		Promises humanitarian assistance to Cortinian IDPs	
	AMEMB Cortina			
	AMEMB Cortina			
	NCA		Tasks DOD to provide humanitarian assistance	
	NCA			
	CJCS		(V4) Issues PLANORD	
	CJCS			
	TRANSCOM			(V5) Follow-on forces delayed

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	SOF / FID			
EXPECTED ACTION	CINCWEST	CINCWEST sends OPREP-3 for Califon invasion	CINCWEST issues Warning Order for airborne task force to Army West	(V5) Initiates planning
	CINCWEST		(V4) issues PLANORD	(V6) OPREP 3P
	CINCWEST			(V6) Initiates planning
	JTF			
	JTF			
	JTF			
Army	XVIII ABC			
	10 Mtn Div			
	10 Mtn Div			
	21st Div			
	ARW		ARW issues Warning Order to 3-325	
	1/10 INF	D-Day: EMPRS, Enroute FRAGORD P+8.5		
	1/10 INF	D-Day: 1st BDE-TF Air-Land Early Entry (Wheels up P+8)		
	1/10 INF	D-Day to D+1: Early Entry Air-Land, Relief in place at P+12		
	3/325			
	3/325			
	JAAP			
Navy	Mt Whitney			
	Mt Whitney	D-5: JFMCC(X) provides DS Naval Surface fires to JTF X'		
	Truman CVBG			
	Inchon			
	Stennis CVBG			
	Ike CVBG			
	JFACC			
	JFMCC			
	JFMCC			
	JFMCC			
	2nd ARG			
	2nd ARG			
Marines	MEB			
	MEB			
	LPTF	Actions on objectives/defend/withdraw	CTP/Targeting vignette with 1/10th	
Air Force	ACC			
	AEF-1			
	AEF-2			
	C2TIG	D-Day to D+1: Pacifica D-Day/Offensive OPS/Simulation		
	Nellis Live Fly			

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Theme	Actor	Monday, 11 Sep AM	Monday, 11 Sep PM	Tuesday AM
	Vignette			
Aragon	PDRA		Denounce the GOC for stockpiling chemical munitions so close to the PDRA border	Continue preparing for their Army level exercise.
	PDRA	Continue preparations for the a major Army FTX		
	PDRA	Deny ethnic cleansing activities and report that Cortinians are fleeing the area due to the increased provocations from the RCA in the IBL area		
	PDRA CDF			PDRA deny arming their SRBM with chemical warheads but do not deny the
	PRA	Maneuvers continue on the western ranges		Continued preparations
	PRA			
	PRA			
	PRA			
	PRN	Remain at sea, no reports on the submarines		Remains at sea
	PRN			
	PRAF	Continue active patrols in PDRA airspace		
	Kashana		Contact with US patrol lost	
	Cortina			Continue defensive preparations
	Cortina			
	Cortina			
	Cortina			
	RCA			
	RCA			
	RCN			
	IDPs	IDPs continue to move west		
	CLF		Vow to continue combat operations in the Alexandria area and retake the airfield	
	CLF			Claims capture of US patrol
	Victoria PNRM	Denounce the GOC for prestocking chemicals in the north so near a human populace like Hot springs.		
	Victoria PNRM			
WHITE CELL	State Dept			
	AMEMB Cortina			
	AMEMB Cortina			
	NCA			
	NCA			
	CJCS			
	CJCS			
	TRANSCOM			

	SOF / FID			
EXPECTED ACTION	CINCWEST		CINCWEST issues Execute Order to ARFOR	
	CINCWEST		CINCWEST Warning Order; new mission JFMCC (STOM 2)	
	CINCWEST		(V4) COA briefing	
	JTF			
	JTF			
	JTF			
Army	XVIII ABC			
	10 Mtn Div			
	10 Mtn Div			D+3 to D+11: 10 Mtn = ARF...
	21st Div			
	ARW		ARW issues deployment order to 3-325	
	1/10 INF		D+2 to D+4: Force on Force (LIC)	
	1/10 INF			
	1/10 INF			
	3/325		D+2 to D+4: Force on Force (LIC)	
	3/325			
	JAAP			
Navy	Mt Whitney		D+5 MT WHITNEY redeploys	ENDEX
	Mt Whitney	VIII (D-1 thru D+2/3)		
	Truman CVBG			
	Inchon			
	Stennis CVBG			
	Ike CVBG			
	JFACC			
	JFMCC			
	JFMCC			
	JFMCC			
	2nd ARG			
	2nd ARG			
Marines	MEB			
	MEB			
	LPTF			
Air Force	ACC			
	AEF-1			
	AEF-2			
	C2TIG		Pacifica Simulation(Cont.) (D+2 to D+5)	
	Nellis Live Fly		Pacifica Live Fly (D+2 to D+5)	

Theme	Actor	, 12 Sep
		PN
	Vignette	
Aragon	PDRA	
	PDRA	
	PDRA	
	PDRA CDF	
	PRA	
	PRA	
	PRA	
	PRA	
	PRN	
	PRN	
	PRAF	
	Kashana	
	Cortina	
	Cortina	
	Cortina	
	Cortina	
	RCA	
	RCA	
	RCN	
	IDPs	
	CLF	
	CLF	
	Victoria PNRM	
	Victoria PNRM	
WHITE CELL	State Dept	
	AMEMB Cortina	
	AMEMB Cortina	
	NCA	
	NCA	
	CJCS	
	CJCS	
	TRANSCOM	

	SOF / FID	
EXPECTED ACTION	CINCWEST	
	CINCWEST	
	CINCWEST	
	JTF	JTF XVIII Deactivated
	JTF	
	JTF	
Army	XVIII ABC	
	10 Mtn Div	
	10 Mtn Div	DR, EXFOR Battle at Ft Polk
	21st Div	
	ARW	
	1/10 INF	
	1/10 INF	
	1/10 INF	
	3/325	
	3/325	
	JAAP	
Navy	Mt Whitney	
	Mt Whitney	
	Truman CVBG	
	Inchon	
	Stennis CVBG	
	Ike CVBG	
	JFACC	
	JFMCC	
	JFMCC	
	JFMCC	
	2nd ARG	
	2nd ARG	
Marines	MEB	
	MEB	
	LPTF	
Air Force	ACC	
	AEF-1	
	AEF-2	
	C2TIG	
	Nellis Live Fly	

Theme	Actor	D+4 Wednesday, 13 Sep	D+5 Thursday, 14 Sep	D+6 Friday, 15 Sep
Aragon	PDRA		PDRA invades Cortinia	
	PDRA			
	PDRA			
	PDRA CDF			
	PRA			
	PRA			
	PRA			
	PRA			
	PRN			
	PRN			
	PRAF			
	Kashana			
	Cortina	(V6) Political resolution, patrol returned to friendly control, no chem wpns		
	Cortina			
	Cortina			
	Cortina			
	RCA			
	RCA			
	RCN			
	IDPs			
	CLF			
	CLF			
	Victoria PNRM			
	Victoria PNRM			
Pacifica	Nevidah			
	Nevidah			
	Nevidah			
	Califon			
	Califon			
	Cal. Insurgents			
US	State Dept	Political resolution, patrol returned to friendly control		
	AmEmb Cortina			
	NCA			
	CJCS			
	CJCS			
	CINCWEST		D+5: CINCWEST sends OPREP-3	
	CINCWEST			
	SOF			
1. PNRM Incursion	CINCWEST			
	JTF-2			

2. NEO	CINCWEST			
	JTF-2			
	JTF-XVIII			
3. Missile Threat	CINCWEST			
	JTF-2			
	JTF-XVIII			
4. Human. Assistance	CINCWEST			
	JTF-XVIII			
5. Delay of Forces	CINCWEST			
	JTF-XVIII			
6. Chem Wpns Cache	CINCWEST			
	JTF-XVIII			
7. Time Crit. Tgts	CINCWEST			
	JFACC			
JTF				
Army	XVIII ABC	JTF XVIII Deactivated		
	10 Mtn Div		D+5: Division issues defense OPLAN	D+5: defense EXORD issued
	10 Mtn Div			
	21st Div			
	ARW			
	1/10 INF	D+2 to D+4: Force on Force (LIC)		D+5 to D+7: defensive prep (D+7 NLT def
	1/10 INF	D+4 to D+5: MOUT ACTD		
	1/10 INF			
	3/325	Redeploy		
	3/325			
	JAAP			
Navy	Mt Whitney			
	Mt Whitney			
	Truman CVBG			
	Inchon			
	Stennis CVBG			
	Ike CVBG			
	JFACC			
	JFMCC			
	JFMCC			
	JFMCC			
	2nd ARG			
	2nd ARG			
Marines	MEB			
	MEB			
	LPTF	D+4 to D+6: STOM		
Air Force	ACC			D+6: ENDEX/HOTWASH
	AEF-1			
	AEF-2			
	C2TIG	Pacifica Simulation(Cont.) (D+2 to D+5)		
	Nellis Live Fly	Pacifica Live Fly (D+2 to D+5)		

Theme	Actor	D+7 Saturday, 16 Sep	D+8 Sunday, 17 Sep	D+9 Monday, 18 Sep
Aragon	PDRA			
	PDRA			
	PDRA			
	PDRA CDF			
	PRA			
	PRA			
	PRA			
	PRA			
	PRN			
	PRN			
	PRAF			
	Kashana			
	Cortina			
	Cortina			
	Cortina			
	Cortina			
	RCA			
	RCA			
	RCN			
	IDPs			
	CLF			
	CLF			
	Victoria PNRM			
	Victoria PNRM			
Pacifica	Nevidah			
	Nevidah			
	Nevidah			
	Califon			
	Califon			
	Cal. Insurgents			
US	State Dept			
	AmEmb Cortina			
	NCA			
	CJCS			
	CJCS			
	CINCWEST			
	CINCWEST			
	SOF			
1. PNRM Incursion	CINCWEST			
	JTF-2			

2. NEO	CINCWEST			
	JTF-2			
	JTF-XVIII			
3. Missile Threat	CINCWEST			
	JTF-2			
	JTF-XVIII			
4. Human. Assistance	CINCWEST			
	JTF-XVIII			
5. Delay of Forces	CINCWEST			
	JTF-XVIII			
6. Chem Wpns Cache	CINCWEST			
	JTF-XVIII			
7. Time Crit. Tgts	CINCWEST			
	JFACC			
JTF				
Army	XVIII ABC			
	10 Mtn Div			
	10 Mtn Div	D+3 to D+11: 10 Mtn = ARFOR, EXFOR Battle at Ft Polk		
	21st Div			
	ARW			
	1/10 INF	end)	D+8. MOUT FRAGORD	
	1/10 INF			
	1/10 INF			
	3/325			
	3/325			
	JAAP			
Navy	Mt Whitney			
	Mt Whitney			
	Truman CVBG			
	Inchon			
	Stennis CVBG			
	Ike CVBG			
	JFACC			
	JFMCC			
	JFMCC			
	JFMCC			
	2nd ARG			
	2nd ARG			
Marines	MEB			
	MEB			
	LPTF			
Air Force	ACC			
	AEF-1			
	AEF-2			
	C2TIG			
	Nellis Live Fly			

Theme	Actor	D+10 Tuesday, 19 Sep	D+11 Wednesday, 20 Sep	D+12 Thursday, 21 Sep
Aragon	PDRA			
	PDRA			
	PDRA			
	PDRA CDF			
	PRA			
	PRA			
	PRA			
	PRA			
	PRN			
	PRN			
	PRAF			
	Kashana			
	Cortina			
	Cortina			
	Cortina			
	Cortina			
	RCA			
	RCA			
	RCN			
	IDPs			
	CLF			
	CLF			
	Victoria PNRM			
	Victoria PNRM			
Pacifica	Nevidah			
	Nevidah			
	Nevidah			
	Califon			
	Califon			
	Cal. Insurgents			
US	State Dept			
	AmEmb Cortina			
	NCA			
	CJCS			
	CJCS			
	CINCWEST			
	CINCWEST			
	SOF			
1. PNRM Incursion	CINCWEST			
	JTF-2			

2. NEO	CINCWEST			
	JTF-2			
	JTF-XVIII			
3. Missile Threat	CINCWEST			
	JTF-2			
	JTF-XVIII			
4. Human. Assistance	CINCWEST			
	JTF-XVIII			
5. Delay of Forces	CINCWEST			
	JTF-XVIII			
6. Chem Wpns Cache	CINCWEST			
	JTF-XVIII			
7. Time Crit. Tgts	CINCWEST			
	JFACC			
JTF				
Army	XVIII ABC			
	10 Mtn Div			
	10 Mtn Div			
	21st Div			
	ARW		D+11: ENDEX	
	1/10 INF		D+11: MOUT Attack	
	1/10 INF			
	1/10 INF			
	3/325			
	3/325			
	JAAP			
Navy	Mt Whitney			
	Mt Whitney			
	Truman CVBG			
	Inchon			
	Stennis CVBG			
	Ike CVBG			
	JFACC			
	JFMCC			
	JFMCC			
	JFMCC			
	2nd ARG			
	2nd ARG			
Marines	MEB			
	MEB			
	LPTF			
Air Force	ACC			
	AEF-1			
	AEF-2			
	C2TIG			
	Nellis Live Fly			

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Theme	Actor	D+13 Friday, 22 Sep	D+14 Saturday, 23 Sep	D+15 Sunday, 24 Sep
Aragon	PDRA			
	PDRA			
	PDRA			
	PDRA CDF			
	PRA			
	PRA			
	PRA			
	PRA			
	PRN			
	PRN			
	PRAF			
	Kashana			
	Cortina			
	Cortina			
	Cortina			
	Cortina			
	RCA			
	RCA			
	RCN			
	IDPs			
	CLF			
	CLF			
	Victoria PNRM			
	Victoria PNRM			
Pacifica	Nevidah			
	Nevidah			
	Nevidah			
	Califon			
	Califon			
	Cal. Insurgents			
US	State Dept			
	AmEmb Cortina			
	NCA			
	CJCS			
	CJCS			
	CINCWEST			
	CINCWEST			
	SOF			
1. PNRM Incursion	CINCWEST			
	JTF-2			

2. NEO	CINCWEST			
	JTF-2			
	JTF-XVIII			
3. Missile Threat	CINCWEST			
	JTF-2			
	JTF-XVIII			
4. Human. Assistance	CINCWEST			
	JTF-XVIII			
5. Delay of Forces	CINCWEST			
	JTF-XVIII			
6. Chem Wpns Cache	CINCWEST			
	JTF-XVIII			
7. Time Crit. Tgts	CINCWEST			
	JFACC			
JTF				
Army	XVIII ABC			
	10 Mtn Div			
	10 Mtn Div			
	21st Div			
	ARW			
	1/10 INF			
	1/10 INF			
	1/10 INF			
	3/325			
	3/325			
	JAAP			
Navy	Mt Whitney			
	Mt Whitney			
	Truman CVBG			
	Inchon			
	Stennis CVBG			
	Ike CVBG			
	JFACC			
	JFMCC			
	JFMCC			
	JFMCC			
	2nd ARG			
	2nd ARG			
Marines	MEB			
	MEB			
	LPTF			
Air Force	ACC			
	AEF-1			
	AEF-2			
	C2TIG			
	Nellis Live Fly			

IDA

Draft Final

Joint Strike Force
Operational Concept

Joint Advanced Warfighting Program

November 15, 2000

PREFACE

CONTENTS

ILLUSTRATIONS

EXECUTIVE SUMMARY

PURPOSE

The collapse of the Soviet Union represented a watershed event in American defense planning: the monolithic threat that was the center of defense planning for nearly fifty years disappeared, leaving decision-makers within and without the US Department of Defense (DoD) to confront a new and uncertain geo-strategic environment. This change in the geo-strategic environment, when coupled with the trend towards "jointness" and advances in technology, have made many question if the command, control, and employment of joint forces is as effective and efficient as it might be. The Joint Strike Force (JSF) Operational Concept is intended to provide senior decision-makers with one approach to resolving the deficiencies and inefficiencies associated with the doctrinal organization and employment of joint forces.

SCOPE

In the autumn of 1999, the Assistant Secretary of Defense for Strategy and Threat Reduction, Edward L. Warner III, tasked the Joint Advanced Warfighting Program (JAWP) at the Institute for Defense Analyses with developing an Operational Concept for the Joint Strike Force. His was a vision of a rapidly deployable joint force capable of achieving national military objectives in small-scale contingencies. JAWP's JSF Concept Development Team was given the following guidance:

▶ **Be bold.** While the Concept Development Team tried to work within the programs and concepts already embraced and supported by the Services, they were repeatedly instructed by ASD(S&TR) to consider alternative futures in which budgetary and programmatic politics were not a consideration.

▶ **Develop a near- to mid-term solution.** For the purposes of conceptualizing and writing the Operational Concept, the Concept Development Team used the 2004–2007 timeframe to focus and refine its creative processes.

▶ **Focus on joint (vs. combined) capabilities.** The Concept Development Team was told to focus on organizational and doctrinal innovation within the context of US (joint) forces. Despite this guidance, the JSF felt obliged to include a brief discussion of the importance and relevance of coalition partners because of the capabilities they will provide in future military operations.

▶ **Do not perform rigorous analyses of the concept.** Because the JSF Operational Concept was visionary in nature and constrained in time, the JSF Concept Development Team was instructed not to subject the Operational Concept to formal testing or analysis (e.g., modeling and simulation). Instead, the Concept Development Team was to rely on the experience and professional judgment of the military professionals and subject matter experts who participated in the concept development process.

▶ **Work Quickly.** The JSF Concept Development Team was formed in January 2000 and tasked to complete an Operational Concept for the sponsors by the summer of 2000.

METHODOLOGY

To develop the JSF Operational Concept, the Concept Development Team used the following methodology:

▶ **Individual Research.** Each member of the Concept Development Team was assigned a specific aspect of the Operational Concept for developing. Each member researched relevant issues and challenges, reached out to subject matter experts, visited relevant sites and facilities, and participated in activities related to their area.

▶ **Seminars.** The Concept Development Team participated in a Headquarters Design Conference, hosted by the Systems Engineering Department at the US Military Academy. The seminar involved approximately 20 military officers and focused on defining the role and functions of the JSF Headquarters.

▶ **Seminar War Games.** The Concept Development Team hosted two seminar war games that were attended by representatives of Unified Commands, the Services, and defense-related agencies and institutions. The war games focused on intelligence preparation of the battlespace, force application, and deploying and sustaining the JSF.

▶ **Red Team War Game.** The Red Team War Game, hosted by the Marine Corps Warfighting Laboratory at Marine Corps Base Quantico, Virginia, pitted a JSF against an unconstrained adversary.

▶ **Joint Advanced Warfighting Program's Senior Advisory Group (SAG).** The Concept Development Team also briefed its concept to the JAWP SAG, which is composed of senior general and flag officers. These meetings were also attended by senior civilian officials within DoD and representatives from Unified Commands, the Joint Staff, and the Services.

CONCLUSION

As the Concept Development Team's understanding of the problems and challenges of commanding, controlling, and employing joint forces grew, they came to advocate and embrace three basic concepts that are fundamentally different from the existing doctrinal approach to joint warfare:

▶ Each geographic CINC should have a standing JSF assigned to his command.

▶ The JSF should be have a distributed headquarters composed of Deployable and Fixed Elements. Command and staff functions within the Headquarters should be organized in such a way as to facilitate decision superiority (e.g., an Information & Operations Cell, an Effects Cell, a Logistics Cell). This distributed and networked organization will enable the effective command and control of joint forces while minimizing the logistics burden associated with deploying a joint headquarters.

▶ Joint forces should be aligned and synchronized, the results being standing relationships that will reduce the time needed to train units and staffs to work together and that will maximize the ability of the JSF to rapidly respond to a developing crisis or conflict.

Because of the bold and innovative approach to warfighting contained in the Operational Concept, the Services, in their review of an earlier draft of this document, disagreed with or disputed many of the findings, conclusions, and recommendations. Specific objections are contained in footnotes; the complete text of the Services' comments are contained in Appendices A through D.

PART 1.
INTRODUCTION AND
OPERATIONAL CONCEPT

Chapter 1. Introduction

1.1 INTRODUCTION

This document contains the Joint Advanced Warfighting Program's vision for a Joint Strike Force (JSF), a rapidly deployable joint combat force capable of achieving national security objectives in small-scale contingencies. The concept presented herein is just one of many possible solution sets that address the challenges and obstacles that confront US military forces around the world on a daily basis. This chapter provides the reader with a description of the motivation for developing a JSF, a description of the perceived shortfalls in existing capabilities, an overview of the methodology employed by the JSF Concept Development Team in developing the concept, a brief discussion of the concept itself, and an overview of the organization of the Operational Concept document.

1.2 THE REQUIREMENT FOR A JSF

Since the collapse of the Soviet Union, the US military has been confronted by several new and emerging threats and challenges. Many of these of these threats and challenges are asymmetric in nature—that is to say, these threats and challenges diminish the strength of the US military through the employment of strategies that focus on the US military's weaknesses and vulnerabilities. Additionally, there is a perception among decision-makers that the key to success in future military operations is the ability of the US military to respond to such contingencies in a rapid and decisive manner.

For nearly half a century, the US military and its allies trained and equipped to meet and defeat the Soviet Union and its Warsaw Pact allies on the plains of Europe. The collapse of the Soviet Union in 1991 ended the Cold War. Furthermore, the collapse of the Soviet Union initiated a profound change in the nature and character of the geo-strategic environment. The largely bi-polar world of the Cold War has been replaced by a relatively unstable uni-polar world, dominated by the US military. Regional powers, historically obscured by the massive threat of the Soviet Union and the Warsaw Pact, have emerged as real and dangerous threats to American national security and American national interests. Furthermore, transnational groups and organizations further complicate the geo-strategic environment. Additionally, few potential adversaries intend to confront American political and military might directly. Rather, they are pursuing asymmetric strategies that match an adversary's strength against American (or allied) weaknesses. Some of these strategies include:

> ► **Limited campaigns.** By pursuing a short campaign with limited objectives, future adversaries could attempt to present the United States and its allies with

a *fait accompli*. This type of strategy would capitalize on the US military's inability to deploy to a theater and engage in combat operations in a short amount of time.

▶ **Threatening neighbors and allies.** Future adversaries could also pursue a strategy in which they complicate the US military's ability to deploy into theater by threatening their neighbors and US allies with unprovoked attacks (possibly involving weapons of mass destruction (WMD)). If the threats of attack are ignored and future adversaries actually act out on them, the consequences could be much more severe: the US and its allies might have to deal with large numbers of civilian and military casualties, the loss of equipment (because of contamination from WMD), and the loss of logistic nodes (also because of contamination).

▶ **Threatening to intensify the conflict.** Future adversaries might also threaten to intensify the conflict, playing on the "casualty aversion" myth.[1] If the conflict is not directly related to America's national security, such a gambit might work: political and public debate would require the National Command Authority (NCA) to develop and maintain support for the deployment and employment of military forces. A second possible strategy that could fall into this category would be conducting attacks (involving conventional weapons, information operations, and/or weapons of mass effects) against civilian and military targets within the continental United States (CONUS).

▶ **Using political maneuvers or other means to distract from military issues.** Future adversaries might also rely on political maneuvering to delay and complicate military responses to their actions. Such schemes would involve appealing to international organizations (e.g., the United Nations) or asking that traditional allies act as intermediaries. As the issues were debated in the international political arena, the adversary could consolidate their position and better prepare for any future US and/or allied military response. Additionally, adversaries might pursue national objectives using forces other than military institutions (e.g., enabling an ethnic group to pursue national objectives).

To address these challengers and challenges, many within and without the US Department of Defense (DOD) believe that the US military must be capable of responding to developing crises and conflicts rapidly and decisively. The *National Security Strategy*, which describes the Administration's national security agenda, notes that because "...shaping efforts alone cannot guarantee the international security environment we seek, the United States must be able to respond at home and abroad to the full spectrum

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[1] For an interesting assessment of the American public's perceived demand for casualty-free victories, see Peter D. Feaver and Christopher Gelpi's article, How Many Deaths Are Acceptable? A Surprising Answer. *Washington Post*, 7 November 1999, Page B3.

of threats and crises that arise."[2] The *National Military Strategy* notes that the US military's "...ability to rapidly respond and decisively resolve crises provides the most effective deterrent and sets the stage for future operations if force must be used."[3] Finally, *Joint Vision 2020*, the US Department of Defense's conceptual template for future joint warfighting, notes that future joint forces must be able to "...rapidly project power worldwide in order to achieve full spectrum dominance."[4]

Given the current (and anticipated) geo-strategic environment and the threats and challenges characteristic thereof, the perception that the US military must be capable of rapidly and decisively responding to developing crises seems sound. However, some might contend that the ability to do so already exists and the JSF is redundant at best and superfluous at worst. A careful examination, provided in the next section, of existing capabilities shows that such an assessment is not entirely accurate.

1.3 THE SHORTFALLS OF EXISTING CAPABILITIES AND THE JSF

There have been three basic criticisms of the US military's ability to rapidly respond to small-scale contingencies. Firstly, the *ad hoc* nature of Joint Task Forces (JTF) limit their effectiveness. Secondly, it is often difficult to deploy and effectively sustain joint forces in rapidly developing small-scale contingencies. Thirdly, Service-specific rapid response forces are typically constrained by their very organization. This section shall examine each of these criticisms in detail.

Historically, Joint Task Forces have been stood up to address specific contingencies or challenges and are stood down following the resolution of the contingency. Because of the transient nature of Joint Task Forces, JTF staffs rarely have the opportunity to train together and develop the habitual relationships essential to efficient staff work. Many perceive these shortcomings as severe impediments to the realization of the full potential of joint warfighting.

A second perceived shortfall in existing response capabilities is the relatively long time it takes to deploy force to and employ forces to an area of operations. One criticism of Operation Desert Storm was the time it took to build the "iron mountains" necessary for the conduct of combined arms operations against the Iraqi military. More recently, Task Force Hawk was unable to rapidly deploy to and participate in operations against the Serbian military in Operation Allied Force. While there are many possible and plausible explanations for these delays, given the desire of civilian and military leaders to be capable of responding rapidly and decisively to crises and conflicts, it will be necessary to develop new and innovative approaches for deploying, sustaining, and employing joint forces.

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[2] Clinton, W.J. 1999. *A National Security Strategy for a New Century*. Washington, DC: US Government Printing Office. Page 11.

[3] CJCS. 1997. *National Military Strategy of the United States of America*. Washington, DC: US Government Printing Office. Page 2.

[4] CJCS. 2000. *Joint Vision 2020*. Washington, DC: US Government Printing Office.

The final shortfall of existing rapid response capabilities is that they are, by and large, Service-based capabilities with limited capabilities. For example, the Marine Expeditionary Units (MEUs) and the XVIII Airborne Corps represent credible and effective rapid response capabilities. However, each is also constrained by its size and organization. While the MEU is an ideal option for conducting small scale contingencies such as non-permissive non-combatant evacuation operations (NEOs), its size and support structure make it an inappropriate option for conducting protracted operations against a well-equipped and determined enemy. The XVIII Airborne Corps, while capable of responding to any location around the world with a portion of its force in a relatively short period of time, requires significant (inorganic) lift and support assets to enable it to bring its full combat power to bear.

To resolve these issues, the Joint Advanced Warfighting Program developed an Operational Concept of a JSF. The JSF is a standing joint headquarters with synchronized, aligned joint forces assigned to each of the warfighting commander in chiefs (CINCs). The rationale is that CINC-specific JSFs would enable the CINCs to have their JSFs train to area of responsibility (AOR) specific issues and contingencies as well as to develop AOR-specific effects-based campaigns. The JSF enables the geographic CINCs to provide the National Command Authority (NCA) with a means of responding to upper-level, small-scale contingencies with overwhelming combat power in a relatively short period of time (i.e., 24 to 96 hours). In exchange for the ability to bring combat power to bear in short order, the JSF is capable of conducting operations for a limited period of time (approximately 30 days). The JSF would be composed of a theater-based headquarters supported by aligned theater-based units, CONUS-based units and organizations, national assets and agencies, and international organizations and agencies. The JSF would plan and execute rapid, decisive operations—operations phased in such a way as to appear as a near-simultaneous application of combat power intended to overwhelm an adversary's ability to achieve his national objectives and impede his ability to mount an effective defense against US operations. The JSF would use situational understanding to strike at nodes in the networks that constitute the adversary's power base while, at the same time, protecting and preserving the physical and intangible networks that enable its combat effectiveness. The application of these kinetic and non-kinetic strikes[5] would focus on leaving the adversary with only less than favorable or undesirable courses of action, thus compelling him to comply with US demands or international law. In the event that the conflict escalates and becomes a major theater war, the JSF would enable and facilitate the arrival of follow-on forces. In the event that the conflict is resolved, the JSF would facilitate the transition of joint area of operations responsibilities to follow-on forces (e.g., peacekeeping forces) and/or non-governmental relief agencies. Following the transfer of responsibility to follow-on forces, the JSF will redeploy out of the area of opera-

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[5] For the purposes of this paper, *kinetic means* will include options such as air- and sea-launched munitions, direct and indirect fires, and the use of ground forces and special operations forces. *Non-kinetic means* will include options such as information operations, psychological operations, and electronic warfare. *Non-lethal weapons* are included in either one category or the other, depending on their characteristics. It should be noted that the examples listed represent only a small segment of possible options.

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tions, reconstitute itself, and resume its peacetime planning, training, and CINC-directed engagement activities.

1.4 CONCEPT DEVELOPMENT TEAM METHODOLOGY

To develop the Operational Concept contained in this document, the JSF Concept Development Team engaged in several activities including concept identification, an initial planning conference, seminar war games, a headquarters design seminar, a Red Team War Game, and multiple briefings to the Joint Advanced Warfighting Program's Senior Advisory Group. Each of these activities was viewed as contributing to a larger process (see Figure 1). The process is described so that the reader has an understanding of what the Joint Concept Development Team did (and did not do) in its formulation of the JSF Operational Concept.
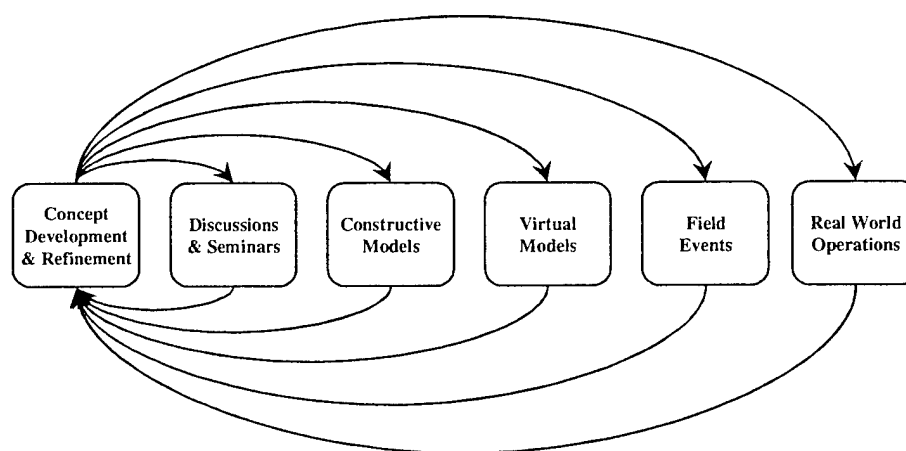
Figure 1. Concept Development as a Process Leading to a Capability

Constraints

Before the methodology is discussed, it is important to acknowledge that the JSF Concept Development Team operated under some specific guidance and a series of constraints. These parameters included:

▶ **The JSF as a near- to mid-term solution.** The sponsor envisioned the JSF as being fielded in the 2004–2007 time frame and requested that the Concept Development Team focus on headquarters design. Despite the specified time frame, the Concept Development Team was encouraged to be bold in their thinking and recommendations (e.g., consider innovative material solutions).

▶ **A US-only focus.** The Concept Development Team was told to focus their effort on joint (vs. combined) forces. Despite this guidance, the JSF could not help but to include coalition partners, even if only in a superficial manner.

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▶ **Time constraints.** The JSF Concept Development Team was formed in January of 2000 and tasked to complete an Operational Concept and Implementation Plan for the sponsors by summer, 2000.

▶ **Analytic constraints.** The sponsors acknowledged that the time constraint would limit the ability to explore or test the operational concept in a formal and analytic way. Because of this, the JSF Concept Development Team did not have to subject the Operational Concept to formal testing or analysis. Instead, the Concept Development Team relied on the experience and professional military judgment of the military professionals and subject matter experts they included in the concept development process.

Internal Discussion and Debate

In January of 2000, the Concept Development Team met to identify how the JSF might be organized, trained, and equipped. Among the considerations were alternative force structures, alternative headquarters staffing, and alternative headquarters design.

▶ **Alternative Force Structures.** The Concept Development Team conceptualized and considered JSFs composed solely of special operations forces, aircraft and standoff munitions, light infantry units mounted on small and mobile vehicles, airborne and air assault forces, mechanized units equipped with lightly armored vehicles, and heavily armored units. Each of these force structures was rejected in turn—typically because their use and effectiveness were of limited value, depending on the situation or environment. For example, aircraft and standoff munitions were perceived as being effective against some threats in some environments and nearly useless against other threats in a different environment. Likewise, heavily armored mechanized units were also perceived as being effective against some threats in some environments and nearly useless against other threats in a different environment. In the end, the JSF Concept Development Team opted to maximize both the flexibility and effectiveness of the JSF by developing a construct that employed a basic force set[6] that could be augmented by other, mission-tailored forces as needed.

▶ **Alternative Approaches to Headquarters' Staffing.** The Concept Development Team identified and considered three different approaches to Headquarters staffing: *ad hoc* headquarters, headquarters augmentation cells, and standing joint headquarters.

  ❏ *Ad hoc* headquarters encompass the current approach to JTF headquarters staffing: headquarters are formed and staffed as a crisis develops and stood down following the resolution of the crisis. The perceived

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[6] This basic force set is composed of an Army brigade, a Marine Expeditionary Brigade, a Carrier Battle Group, and an Air Expeditionary Force.

weakness in this design was the fact the personnel assigned to these *ad hoc* headquarters cannot train and work together prior to a crisis, thus limiting the ability of the commander and staff to develop the habitual relationships that are important to efficient and effective staff work.

❏ A second option that was considered was a headquarters augmentation cell, akin to US Pacific Command's deployable joint task force augmentation cell (DJTFAC). While this approach to headquarters staffing certainly marked an improvement over *ad hoc* headquarters and seemed appropriate for some contingencies, the Concept Development Team ultimately rejected this approach to staffing as a universal solution because (1) relationships would still have to be developed between the DJTFAC personnel and the supported staff, and (2) the headquarters writ large typically remained Service-centric.

❏ The final approach to staffing that was considered was the standing joint headquarters. The Concept Development Team believed that the standing headquarters was the best means of enabling the CINC to rapidly respond to upper-end, small-scale contingencies, enabling the personnel assigned to a joint headquarters to develop the horizontal and vertical habitual relationships necessary to the successful command and control of military forces, and the best means of integrating Service-based warfighting capabilities in rapid and decisive effects-based operations.

▶ **Alternative Headquarters Designs**. The JSF Concept Development Team also considered alternative approaches to headquarters design. The options considered included a hierarchical organization, a nodal organization, and a "heretic" organization.

❏ The hierarchical headquarters is the headquarters design familiar to most military professionals. In it, separate staff functions work for a Commander through a chain of command. The perceived shortfall of this design is the likelihood that the organization will be stovepiped, thus reducing the overall efficiency of the organization.

❏ The model for a nodal headquarters was borrowed from the US Army's Strike Force effort. The nodal headquarters is characterized by the organization of personnel into functional nodes (e.g., Operations and Intelligence, Effects, Logistics). The nodal headquarters (as it existed) was rejected by the Concept Development Team because they believed that it neither provided for the effective integration, command, and control of joint forces nor did it provide for the integration of non-military agencies and organizations.

❏ The third headquarters design that was considered by the Concept Development Team was the Heretic Model, which was developed by

General Anthony C. Zinni (USMC). The Heretic Model advocated the organization of personnel into functional cells that supported the commander through new staff relationships (e.g., Senior Decision Cell, Battle Staff, Support Staff). Again, the Concept Development Team rejected this model (as it existed) because it believed that it neither broke down traditional stovepipes (e.g., intelligence, operations, and plans were separate cells) nor did it provide for the integration of non-military agencies and organizations.

In the end, the Concept Development Team opted for a combination of modified nodal and heretic models for its command and control structure (depicted in Figure 3 on page 7.

Initial Planning Conference

Following the selection of a notional JSF, the Concept Development Team invited members of Unified Commands and each of the Services to participate in an Initial Planning Conference, which was held at the Institute for Defense Analyses' Simulation Center on 8-9 February 2000. The conference was the debut of the JSF Concept. The team presented specific aspects of the JSF (e.g., headquarters design, intelligence, force application, logistics), and then asked the participants to break into small, functional groups to help guide the Concept Development Team members in their thinking. The result of these small group discussions was a half-day of outbriefs that examined some of the issues and challenges that the JSF had to consider in its future efforts.

Seminar War Games

After writing the first draft of the *Joint Strike Force Operational Concept*, the Concept Development Team hosted two seminar war games. The first seminar war game, which was held from 3-7 April 2000 at the Institute for Defense Analyses, focused on intelligence preparation of the battlespace and force application. The second war game, which was held from 5-8 June 2000 also at the Institute for Defense Analyses, focused on deploying and sustaining the JSF (as characterized in the second draft of the *Joint Strike Force Operational Concept*). The purpose of the seminar war games was to allow subject matter experts from within and without the US Department of Defense to review and refine the ideas and concepts advocated by the Concept Development Team.

Headquarters Design Conference

Between the two seminar war games, the Systems Engineering Department at the US Military Academy at West Point hosted a JSF Headquarters Design Conference. The conference, which was headed by General Gordon R. Sullivan (US Army, Ret.) and attended by 17 active and retired military officers, identified the functions that a JSF Headquarters should perform, a notional personnel requirement for the JSF Headquarters (about 350 people), and one possible division of labor between the Deployable and Fixed Elements of the Headquarters.

Red Team War Game

After the third draft of the *Joint Strike Force Operational Concept* was released, the JSF Concept was tested in a Red Team War Game. The War Game, which was hosted by the Marine Corps Warfighting Laboratory at Marine Corps Base Quantico, pitted a JSF against a free-thinking and unconstrained adversary. The War Game enabled the JSF Concept Development Team to consider the strengths and weaknesses of the JSF Operational Concept in light of actual military operations.

Senior Advisory Group Briefings

Finally, the JSF Concept Development Team briefed the operational concept to the Joint Advanced Warfighting Program's Senior Advisory Group (SAG) on two occasions. The SAG is composed of prominent retired general and flag officers from each of the Services. Additionally, each of the briefings was also attended by officers and representatives from the US Joint Forces Command and from each Service.

1.5 ORGANIZATION OF THIS DOCUMENT

This document contains the Joint Advanced Warfighting Program's vision for a JSF. The Operational Concept contained herein is but one of many possible solution sets that address the doctrinal and organization inefficiencies and weaknesses characteristic of traditional Joint Task Forces. The Operational Concept is supported by five Enabling Concepts—Headquarters Design, Intelligence and Information, Effects Planning and Execution, Logistics, and Communications and Computers.

JSF Operational Concept

Chapter 2 contains an overview of the JSF Operational Concept and details how a JSF might operate in the different phases of a crisis. This chapter is intended to provide the reader with a context for considering the enabling concepts discussed in the chapters that follow.

Headquarters Design

Chapter 3 details the organization and function of the JSF Headquarters. The Headquarters is composed of two basic headquarters elements (the Deployable Headquarters and the Fixed Headquarters). Within each of these elements, there are four basic cells: the Information & Operations Cell, the Effects Cell, the Logistics Cell, and the Communications Element. The Concept Development Team believes that the functional alignment of command and staff functions within a networked headquarters will enable the effective and efficient command and control of joint forces.

Intelligence and Information

Chapter 4 examines the roles of intelligence and information within the JSF. The JSF will attempt to realize a high degree of situational awareness and understanding through the application of traditional and innovative intelligence collection and analyses tech-

niques. This situational awareness and understanding will enable the JSF to plan and conduct effects-based operations.

Effects Planning and Execution

Chapter 5 examines the planning, execution, and control of effects-based operations within the JSF. After discussing the goals of effects-based operations at the strategic, operational, and tactical levels, the importance of effects integration, coordination, and support is discussed in detail.

Logistics

Chapter Six, Logistics, details a concept of logistics that overcomes formidable challenges in the areas of deployment and sustainment. The concept takes into consideration the limited availability of strategic and intra-theater airlift, the limited capacity of worldwide deployment support infrastructure, increasingly threatening anti-access capabilities our adversaries will employ in the future, and organizational and technical innovations related to military logistics. Continuing to develop and implement the components that support Focused Logistics will allow US forces to meet these challenges in the future.

Communications and Computers

Chapter 7 examines the importance of communications and computers within the JSF Operational Concept. This chapter also identifies some of the capabilities—such as the ability to generate a Common Relevant Operational Picture, the ability to develop a Common Tactical Picture, etc.—that are key enablers for rapid and decisive operations.

Appendices, Bibliography, Acronyms and Abbreviations

Service comments are provided in Appendices A through D. A bibliography and a list of acronyms and abbreviations are provided at the end of the report.

Chapter 2. Operational Concept

2.1 INTRODUCTION

The Joint Advanced Warfighting Program's vision (see Figure 2 on the next page) of a JSF is composed of standing joint headquarters with synchronized and aligned joint forces assigned to the each of the warfighting CINCs. The JSF enables the geographic CINCs to provide the National Command Authority with a means of rapidly responding to upper-level, small scale contingencies (i.e., Kosovo, Panama, Haiti). In exchange for the ability to bring combat power to bear in short order (i.e., 24 to96 hours), JSF operations will be of limited duration (i.e., approximately 30 days). The theater-based headquarters supported by theater-based units, CONUS-based units and organizations, national assets and agencies, and international organizations and agencies. JSF operations will occur in a rapid and decisive manner—the operations will be phased in such a way as to appear as a near simultaneous application of combat power. The JSF will use situational awareness and understanding to deliberately strike nodes in the networks that comprise the adversary's power base while, at the same time, protecting and preserving the physical and intangible networks that enable its combat effectiveness. The application of these kinetic and non-kinetic strikes[7] will focus on leaving the adversary with less than favorable and undesirable courses of action, thus compelling him to comply with US demands or international law. In the event that the conflict escalates beyond the capability of the JSF, the JSF will facilitate the arrival of follow-on joint forces. In the event that the conflict is resolved, the JSF will facilitate the situational understanding and arrival of follow-on forces (i.e., peacekeeping forces) and/or non-governmental organizations. Following the transfer of responsibility to follow-on forces, the JSF will deploy out of the area of operations, reconstitute itself, and resume its peacetime planning, training, and CINC-directed engagement activities.[8]

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[7] For the purposes of this paper, *kinetic means* will include options such as air- and sea-launched munitions, direct and indirect fires, and the use of ground forces and special operations forces. *Non-kinetic means* will include options such as information operations, psychological operations, and electronic warfare. *Non-lethal weapons* are included in either one category or the other, depending on their characteristics. It should be noted that the examples listed represent only a small segment of possible options.

[8] USMC does not "...recognize this Operational Concept as valid, desirable, or executable." USN "...believes...that key aspects and assumptions of the JSF concept are not valid and does not concur with the JSF Operational Concept as written." While USAF supports "...the overall JSF project," it does not believe that the concept as written is "...ready for OSD review" and recommends that a "...rewritten operational concept...should be submitted to the Joint Staff and the Services for review and comment, prior to submission to OSD."

The nature of the Joint Strike Force and JSF operations requires a leader who is willing to disavow the traditional lines of battle for distributed operations; reject linear, phased operations for dynamic and near-simultaneous operation;, and who is willing to exploit opportunities even when it means accepting higher levels of risk.
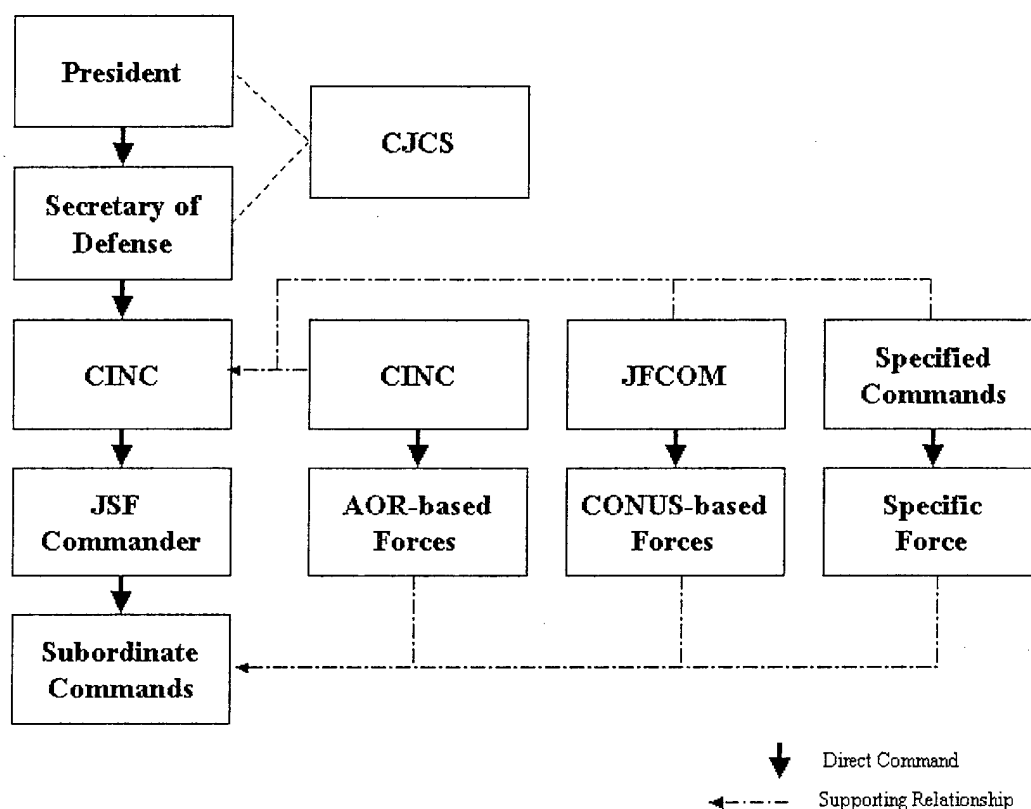
Figure 2. Command Relationships

2.2   THE LIFE CYCLE OF THE JSF

2.2.1   PRE-CRISIS

When not deployed or scheduled for deployment, the JSF will focus on three primary tasks: planning, training, and CINC-directed peacetime shaping activities. These tasks will occur throughout the JSF (i.e., at both the headquarters and aligned unit levels). Planning will enable the JSF to develop plans for likely, possible, and plausible contingencies, thus enabling a more rapid response to a developing crisis. Training will develop and maintain the habitual relationships necessary for effective command, improve lines

of communication, identify seams and friction points, and ensure combat readiness in the event of a real-world contingency. This training will take place not only within the JSF, but could also take place within the CINC's engagement activities, thus improving the ability of the CINC to engage in combined operations.[9]

Planning

Because the objective of the JSF is to bring overwhelming combat power to bear on an adversary within a 24 to 96 hour window, it will be necessary for planning to be an integral component of the JSF's peacetime operations. Planning will encompass the nations that constitute the CINC's area of responsibility. The planning will focus on identifying and characterizing the political, military, and social networks that contribute to the stability of the government of a potential adversary and the effectiveness of its military. These network assessments will be used to develop plans capable of disrupting the stability of the adversary's government and degrading the effectiveness of its military through the application of kinetic and non-kinetic attacks against specific nodes in those networks. These operational plans will be scalable and tailorable, thus providing the CINC and NCA with a range of options for responding to and resolving crises These plans will also identify and characterize unintended consequences of the proposed attacks and the means by which the adversary can work around disruptions and continue to function effectively. Additionally, the JSF will examine and assess the networks necessary for continuous and effective operations with the intent of identifying and resolving vulnerabilities and redundancies, and courses of action the potential adversary might take to degrade the abilities of the JSF.

Training

Training will be a second enabler of rapid, decisive operations. Training internal to the JSF will focus on improving command relationships, improving lines of communication between the headquarters and the aligned joint forces, identifying and resolving seams and friction points, and ensuring combat effectiveness, as well as language abilities and knowledge of local situations.

- ▶ In some cases, training will be limited to command post exercises.

- ▶ In other cases, the forces assigned to and aligned under the JSF will train together to develop and hone certain capabilities (e.g., deploying a mechanized brigade using the vessels attached to a Marine Expeditionary Unit).

- ▶ Finally, the JSF will participate in large-scale field exercises aimed at testing the ability of the JSF to deploy, operate, and redeploy under real world conditions.

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[9] USN contends that each of the activities contained herein do not require a standing headquarters. It believes each of these objectives can "...best be accomplished by a joint headquarters built around regional component commanders as CJTF—not requiring a separate JSF Headquarters."

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Without adequate and realistic peacetime training and preparation, the JSF risks suffering unfortunate and unnecessary setbacks and casualties in performing actual missions.[10]

Engagement

Like training, engagement with regional allies and partners will also occur throughout the JSF. Because both the *National Security Strategy* and *National Military Strategy* acknowledge the importance of allied and coalition partners, it would be remiss for the JSF to operate in isolation from them. The JSF Commander, in accordance with the CINC's regional engagement plans, will identify the aspects in which allied and regional partners can augment and enhance rapid, decisive operations. In some cases, this will entail collaborating with them in developing situational awareness and understanding. In other cases, this will require identifying abilities and capabilities that the United States does not have and determining how the ally or partner could best enhance US operations.

These peacetime operations will help to ensure that when a crisis occurs, the JSF is prepared to respond to it both rapidly and effectively. Without adequate peacetime training and preparation, the JSF risks suffering unfortunate and unnecessary setbacks and casualties in performing actual missions. It should be noted that rapid, decisive operations have a certain amount of risk associated with them, and it would be naïve to think that they will provide decision-makers with the same bloodless (and perhaps anomalous) results as the recent operations over Kosovo and Serbia.

2.2.2 CRISIS

When directed, the JSF transitions from its peacetime posture to a crisis planning mode. This transition is composed of three basic actions: reviewing and/or developing situational awareness and understanding, reviewing and/or developing plans for the conduct of operations in accordance with desired objectives, and developing the logistics pipelines necessary for deploying and sustaining forces during the operation.

As peace degrades into crisis, the JSF's Information and Operations (I&O) Cell will transition from its peacetime training and engagement to reviewing its situational understanding. This shall be accomplished by:

▶ Reviewing current and existing intelligence.

▶ Requesting and collecting updated intelligence assessments as needed.

▶ Identifying new intelligence requirements.

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[10] For an interesting study of first battle experiences, refer to C.E. Heller and W.A. Stofft, 1986, *America's First Battles* University of Kansas Press, Lawrence, KS.

- ► Identifying force requirements and the forces available for operations.

- ► Evaluating the deployment and/or sustainability requirements for planned operations.

- ► Define rules of engagement.

Following the review (or development) of situational awareness, the I&O Cell will review or develop operational plans. These plans will be based on "operationalized" intelligence—that is to say that the plans will be based on intelligence that is not only finished (i.e., analyzed) but fused (i.e., all source intelligence had been de-conflicted, nodes have been combined into networks, networks of networks have been identified and characterized, etc). In conjunction with the JSF's organic intelligence professionals and the intelligence experts available through liaison and reachback relationships, planners will develop or refine plans focused on degrading an adversary's ability to conduct effective military operations through the application of kinetic and non-kinetic means. The planned operations will be characterized by the following:

- ► A focus on *effects* vs. *objectives.*

- ► The deliberate application of kinetic and non-kinetic means against specific nodes to realize desired effects.

- ► The application of combined arms combat power across the spectrum of conflict to achieve operational and strategic goals.

The final aspect of the JSF's crisis phase is the development of logistics pipelines between the JSF, the CINC, other CINCs, the Services, and national agencies to ensure rapid deployment and effective sustainment of the JSF in the event of a conflict. While it may be possible to position some of the necessary supplies and materiel in theater, it will be necessary to import other items to ensure that the JSF can be sustained through its 30-day window of operations, and that follow-on forces don't have to wait for the development and maturation of supply lines. Some of the important features of the JSF's logistics support structure are:

- ► Joint Management of Logistics.

- ► Joint Logistics Teams.

- ► Extensive use of Intermediate Staging Bases.

- ► Joint use of supplies and equipment.

The assessment and review of situational understanding, the development and/or review of operational plans, and the initiation of the logistics pipelines necessary to supporting the JSF are all critical enablers of rapid and decisive operations. This groundwork

will enable the JSF make a smooth transition to the next phase of operations: the preparation of the battlespace.

2.2.3 PREPARING THE BATTLESPACE

Once the crisis has escalated to the point of conflict, the JSF Commander will, through the CINC, receive orders to initiate operations against the adversary from the National Command Authorities (see Figure 2). At this point, the JSF Commander will begin offensive operations against the adversary. These operations will be conducted from the time of the receipt of the order through the first 24 hours (or until such time as the various task forces necessary for executing the planned operations are assembled and ready for operations). These initial operations are intended to accomplish the following:

▶ **Deter the adversary from continuing or escalating the conflict.** This includes performing such tasks as initiating information operations against the adversary that make the consequences of their actions clear and obvious, disrupting the adversary's lines of communication and supply, and closing his most dangerous courses of action (e.g., the employment of weapons of mass destruction (WMD)).

▶ **Enable and facilitate future operations.** This includes performing such tasks as degrading the adversary's command and control networks, degrading his ability to collect intelligence on US and allied operations, disrupting and degrading unit cohesion and effectiveness.

Following the initial shaping operations, a larger portion of the JSF will participate in the conduct of operations and continued preparation of the battlespace. It should be stressed that while distinct phases have been identified for the purpose of describing the concept of operations, such lines would blur in real operations. The intent of rapidly phased operations is to overwhelm the adversary's decision-making ability and maintain a constant pressure on the civil and military networks that support the adversary's political and military leadership.

2.2.4 RAPID AND DECISIVE OPERATIONS

Following the initial shaping operations, the JSF will employ a set of mission-tailored task forces to conduct rapidly phased, decisive combined-arms operations against the adversary. The objectives of these task forces shall be to:

▶ Strike key nodes in an adversary's networks so that maximum effect is realized with a minimum of effort.

▶ Use operations to increase situational awareness and develop options for future operations.

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▶ Exploit situational understanding and operational mobility to keep adversary in a position of disadvantage.

▶ Maintain and sustain the combat effectiveness of the task forces deployed to and employed in the joint area of operations.

The JSF concept envisions that instead of relying on component commands to plan and conduct operations, the planning and management of combat operations shall be overseen by the JSF Headquarters.[11] The operations are envisioned to conducted by multiple (i.e., 1 to n) subordinate task forces. These task forces shall be composed of mission-tailored forces and should only exist as long as they are needed (i.e., any given task force might exist for as little as one mission or for as long as the entire campaign, depending on the circumstances).

The intent of rapid, decisive operations are to overwhelm an adversary's decision-making ability and maintain a constant pressure on the civil and military networks that support the adversary's political and military leadership while, at the same time, enabling US and allied forces to realize strategic objectives.

During the crisis phase, the JSF I&O Cell will, using its situational awareness and understanding, develop operational plans capable of striking at the nodes necessary for maintaining and sustaining the adversary's ability to conduct military operations against US and coalition forces. As the crisis escalates and a conflict seems imminent, the JSF Headquarters, through the Effects Cell, will designate Subordinate Task Forces (ranging in size from squads to battalion-sized units), give them their mission tasking, and provide them with the existing plans. The task forces will then review and amend the plans as needed before fulfilling the assigned mission.

As the JSF's Subordinate Task Forces engage in rapidly phased, distributed operations against relatively vulnerable targets, the adversary will be forced to engage US forces from a position of disadvantage. This disadvantage shall be caused by

▶ the degradation of the adversary's situational awareness and understanding,

▶ the degradation of the enemy's command and control and support structures,

▶ the absence of linear battlelines, and

▶ the JSF's predisposition to attacking remote or relatively vulnerable targets.

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[11] USN disagrees that these functions (i.e., planning and conducting operations) should be performed without the regional component commander's direct participation, noting that "The component commanders know best how to employ his component forces."

With these capabilities, any response on the adversary's part will involve a degree of risk. If the adversary chooses to move to engage the task forces, he may become vulnerable to kinetic attacks from stand off weapons (or, conversely, the JSF could use its ability to re-task forces and operational mobility to redeploy the endangered task force to another target beyond the adversary's immediate reach). If the adversary chooses to ignore the attack, he risks losing a node (or nodes) in one of the networks necessary to maintaining and sustaining their ability to conduct effective operations.

The JSF will rely on air strikes, maritime forces, and information operations to open avenues of approach for follow-on aircraft and ground forces. Once the avenues of approach are secured, other task forces will flow into the area of operations. The initial task forces will be responsible for securing airfields . Once secured, heavier forces and supplies can be airlanded as needed. These points of entry will present the adversary with a credible and dangerous threat. If multiple airfields are seized simultaneously, the adversary will be forced to prioritize his response and theoretically determine if he is willing to attack infrastructure he himself may want to use.

Task forces may also be deployed directly to their targets if JSF's I&O Cell determines that it is feasible.

▶ In some cases, a task force might be deployed to observe and defend important avenues of approach (e.g., to isolate an enemy force by cutting their supply lines).

▶ In other cases, a task force might be responsible for collecting intelligence that will support future operations (e.g., to determine the size and capability of an adversary's weapons of mass effects (WME) program).

In either case, the task forces will rely on the JSF's situational awareness and understanding to deploy them out of the way of a larger enemy force (possibly to another target that will achieve the same desired effect) or reinforce them with additional units (including stand-off weapon systems and air support) to defend against or engage a larger enemy force.

Because the JSF will conduct distributed operations at a high operational tempo for up to 30 days, it will be necessary for the JSF to adequately supply and support the distributed task forces operating in the joint area of operations. The support of these forces is the responsibility of the JSF's Logistics Cell. The Logistics Cell will flow Joint assets from within the theater and from CONUS through the Initial Staging Bases (ISBs) to the JSF's task forces using air resupply when necessary and ground resupply when possible. To speed the initial deployment of forces, supplies will flow into the theater in administrative loads and be repackaged at the ISBs into combat loads. This will enable the JSF to deploy into the area of operations without reception, staging, onward movement and integration (RSOIs). Air resupply will take advantage of the captured airfields, spartan runways, open areas that can support rotary-wing aircraft, and areas that can support the

airdropping of supplies. Ground resupply, if possible, will occur along secured major supply routes (MSRs).

The guiding principle of the logistics effort will be to maximize the combat power and sustainability of the JSF's task forces while minimizing the support structure located within the joint area of operations.

2.2.5 TRANSFER OF COMMAND

In the event that a conflict escalates from a small-scale contingency into a major theater war or de-escalates into humanitarian assistance/peacekeeping operation, it will be necessary for the JSF to transition command and control of the joint area of operations to follow-on forces. This section shall describe how the aforementioned contingencies will be handled by the CINC and the JSF.

Escalation

If the smaller-scale contingency escalates into a major theater war, the JSF will be responsible for enabling the heavier follow-on forces to engage the adversary in rapid, decisive operations. In some cases, this will entail degrading the adversary's ability to deny US and combined forces access to the theater. The JSF might also be tasked to seize and hold an airfield or a port to allow the rapid deployment and employment of heavier (e.g., mechanized and/or armored) forces into the joint area of operations. In other cases, this will involve application of information operations against specific target sites in an effort to degrade the cohesion of the adversary's combat forces. In most cases, it will involve the synergistic application of kinetic and non-kinetic means to shape the joint area of operations to facilitate the deployment, maneuver, and employment of a larger follow-on force. The JSF Headquarters will facilitate the transfer of command by sharing information with the follow-on JTF command as soon as it is stood up and prepared to "pass lines" to the follow-on commander. [12]

Resolution

In the event that the conflict is resolved and becomes a humanitarian assistance and/or peacekeeping operation, the various elements and command structure of the JSF will facilitate the introduction of peacekeepers, non-governmental organizations, and private voluntary organizations into the joint area of operations. This will be accomplished through the sharing of situational awareness and understanding, the sharing of operating bases within the joint operations area (JOA) (with the intent of transferring them to the follow-on forces and organizations following the JSF's departure), and, if so ordered, ini-

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[12] USN, continuing to disagree with the notion that the JSF requires a standing headquarters, notes that if a "...JTF Headquarters is embedded in either the Unified CINC or Component CINC, it will ensure—unlike the JSF Headquarters —a seamless transition from SSC to MTW as the CJTF will be a regional component commander already. Additionally, the scope of capability of an embedded JTF Headquarters is greater than that of a JSF and will not require potentially disruptive transfer of responsibility."

tial logistical support. To facilitate this transfer of responsibility, the JSF Commander may designate a Task Force Commander to oversee the introduction of these forces and organizations into the joint area of operations.

2.2.6 EXTRACTION

The final aspect of JSF operations is the extraction from the joint area of operations. Extraction from the joint area of operations will occur under one of two conditions: *non-permissive conditions* or *permissive conditions*. While this section is intended to address the removal of task forces from the JOA, it is also relevant to their redeployment within the JOA in instances where a task force (or task forces) encounter unexpected, overwhelming opposition or are re-tasked to seize and hold another target. The extraction from the JOA will be *situational dependent* (i.e., the JSF Commander will use the most appropriate means of extricating the task force or task forces from the JOA as quickly as possible without unnecessarily jeopardizing other task forces or the overall mission of the JSF). In any case, reconnaissance, surveillance, and target acquisition (RSTA) assets will be maneuvered to the area around the task force needing extraction to improve the situational understanding of the JSF Headquarters and the task force that is to be extracted, and to ensure that the conditions along the planned exit corridor have not radically changed.

In cases where a non-permissive extraction of forces is required, the JSF Commander can pursue one of three options:

▶ Extraction supported by organic air cover and fire support.

▶ Extraction supported by organic and inorganic air cover and organic and inorganic fire support.

▶ Extraction conducted after the introduction of reinforcements.

In cases where a permissive extraction of forces is possible, RSTA assets will be maneuvered to ensure the safe extrication of personnel and equipment from the area of operations. In either case, the Logistics Cell, operating in conjunction with the I&O Cell, will plan and coordinate the extraction of forces to ensure maximum efficiency is realized without sacrificing force protection.

2.3 CONCLUSION

The JSF represents a new option for the National Command Authorities, the US Department of Defense, and the Unified Combatant Commands. By establishing standing JSF Headquarters with aligned forces in each of the regional areas of responsibility, the United States will be able to respond to smaller-scale contingencies in a rapid and deci-

sive manner.[13] Situational awareness, situational understanding, and operational mobility will enable the JSF to operate well within an adversary's decision cycle. When these enablers are coupled with the ability to dynamically retask units, it soon becomes apparent that the JSF will represent the new standard for maneuver warfare. The remainder of this document is intended to provide the reader with details on the concepts that enable the JSF to conduct rapid and decisive operations.

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[13] USN disagrees with opinion that the JSF represents that the best means for the US to respond to SSCs in a rapid and decisive manner, noting that that JSF Concept Development Team failed to examine alternatives that might better accomplish this objective.

PART 2.
ENABLING CONCEPTS

Chapter 3. The JSF Headquarters

3.1 INTRODUCTION

. Joint Task Force (JTF) Headquarters have become the "headquarters of choice" for commanding and controlling joint forces in operations characterized as *short of major theatre wars*. These JTFs are—by design—temporary organizations created in response to crises and conflicts and stood down after mission accomplishment. Because JTFs are created on demand, they do not have their own C2 systems, an established organizational structure (which includes habitual relationships), or procedures.[14] Many believe that the transient and *ad hoc* nature of traditional JTFs represents serious impediments to the effective command and control of joint forces.

To resolve these flaws and better ensure a rapid and decisive response to developing crises and conflicts, the *Joint Strike Force Operational Concept* builds on three basic concepts:

▶ The realignment of the relationships associated with the command, control, and employment of joint forces;

▶ The design of a JSF Headquarters; and

▶ The establishment of standing JSF Headquarters in each of the five geographic Unified Commands.[15]

These three concepts represent some of the more ambitious aspects of this Operational Concept. The goal of these innovations is to speed up and improve the military decision-making process. The proposed organizational reforms will be complemented and sup-

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[14] Worley, D. R. 1998. *Challenges to Train, Organize and Equip the Complete Combined Arms Team: The Joint Task Force*. Alexandria, VA: Institute for Defense Analyses.

[15] USA "...supports efforts to reduce the ad hoc nature of forming JTF and CJTF HQs" but believes that this "...paper fails to make a compelling case for Standing JTF HQ[s]," noting that the before personnel and other resources could be allocated to CINC-based JSF HQs, there would need to be a clear added benefit to standing JSF HQs over other models. USN disagrees with the assumption that the JSF Headquarters need to be a standing organization, noting that this concept fails to consider the long-term resource considerations of such a recommendation. This objection applies to the entire *Operational Concept*. USN notes that the Services and the Joint Staff are conducting studies to resolve the inefficiencies and deficiencies of JTF headquarters. USN further believes that the assignment of aligned and synchronized joint forces to the JSF Headquarters will preclude these forces from being employed in major theater wars (MTWs). USAF supports the notion of moving away from the *ad hoc* command and control of joint forces to a standing headquarters but notes that the JSF Headquarters would be difficult to realize given current personnel constraints. USAF proposes a smaller cell of about 50 people from the CINC staff that could be augmented with personnel from the component staffs.

ported by information technologies (e.g., robust computer networks, collaborative planning systems).

3.2 REALIGNMENT OF COMMAND AND CONTROL RELATIONSHIPS[16]

This section addresses the realignment of command and control relationship between (1) the JSF Headquarters, the CINC's Headquarters, and the Subordinate Command Headquarters; and (2) the various elements within the JSF Headquarters.

3.2.1 JSF HEADQUARTERS: EXTERNAL COMMAND AND STAFF RELATIONSHIPS

Because the JSF would be a standing joint headquarters with assigned joint forces, its relationship with both the CINC and the Services would be different from the current relationships. Reporting directly to the CINC, the JSF would not only enable the CINC to respond rapidly to crises and contingencies, but also leverage the knowledge and expertise resident in the CINC's staff in its pursuit of JSF objectives. Because the JSF uses a different model for the command and control of joint forces and employs mission-tailored task forces in the conduct of operations, the relationship between the JSF Commander the Services will be different.

3.2.1.1 The JSF and the CINC

Because the JSF will be a standing organization within the CINC's AOR, its relationship with the CINC will be different from traditional JTFs. The JSF will, at the CINC's direction, prepare for and respond to small-scale contingencies. The standing nature of the JSF will allow the CINC to use his staff to remain focused on his theater engagement strategy, his major theater war plans, and other lesser contingencies (e.g., humanitarian assistance, disaster relief), some in conjunction with the JSF Headquarters and others separate from the JSF Headquarters.

There will be a close relationship between the CINC's staff and the staff of the JSF Headquarters. For example, consider the case of small-scale contingencies. Historically, when a JTF is stood up, it creates a centralized headquarters composed of a component's staff augmented by the CINC's staff and other component staffs in which all of the functions associated with the command and control of joint forces are performed in-house. The JSF, leveraging advances in information technology to reachback to supporting organizations and agencies, will be able to reduce its footprint through deploying only a small headquarters and supporting the small Deployable Headquarters with a larger Fixed Headquarters. This Fixed Headquarters will, in turn, reach back to the CINC's staff and

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[16] While USAF believes a shift to functionally oriented cells is an improvement over the current stove-piped staff structure, it believes that the JSF Operational Concept does not adequately define the functions of the cells within the JSF Headquarters. USAF also believes that the absorption of component command echelons (e.g., JFACC) within the JSF Headquarters fails to consider the complexities of those component command echelons. USAF believes that air forces used in JSF war games (e.g., two AEFs and a CVBG) would have overwhelmed the C2 structure and violated "a basic time-tested principle, that aerospace forces must be centrally commanded and controlled."

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other organizations and agencies to support the warfighter. In this sense, the JSF and the CINC's staff will experience a close relationship that enables efficiencies in the command and control of joint forces.

In other cases, such as humanitarian assistance and major theater wars, the CINC's staff will either operate independently of the JSF staff or be supported by the JSF staff. The JSF will not train for humanitarian assistance or disaster relief missions. However, its relationship with non-government organizations (NGOs) and private volunteer organizations (PVOs) may facilitate civil-military operations within the CINC's AOR. In other cases, such as a major theater war, the JSF, as envisioned, may not be capable of performing some or all of the tasks associated with a protracted, large-scale operation. In these situations, the JSF may contribute to the CINC's operations (e.g., personnel, equipment) or may have no role in the operations whatsoever, thus enabling the CINC to maintain a rapid response capability.

3.2.1.2   The JSF and the Services

In addition to having different relationships with the CINC, the JSF will also have different relationships with the Services because the component-level functions have been embedded in the JSF Headquarters. The two reasons for doing so are:

▶ to improve the speed of decision making by removing a layer of command and control, and

▶ to enable the production of truly Joint command and control products (campaign plans, orders, etc).

Because of this vision, the Joint Forces Land Component Commander (JFLACC), the Joint Forces Maritime Component Commander (JFMCC), and the Joint Forces Air Component Commander (JFACC) do not exist in this concept. Instead, the functions normally performed by those organizations are either performed in the JSF Headquarters or are "outsourced" to an organization or agency that is more capable of performing a given task or set of tasks. For example, JFACC Operational Campaign Planning and Apportionment recommendations might occur in the JSF Headquarters, while Air Operations Center functions would be performed by the AEF's Higher HQ, likely the Numbered Air Force. This would ensure that the application of all air assets (USN[17], USAF, USMC[18]) would be centrally commanded and controlled.

Component Headquarters still exist within the CINC's AOR for major theater wars or for a single Service contingency, but they are not the Major Command Headquarters discussed throughout this concept.

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[17] Excluding those sorties apportioned to provide force protection to the CVBG.

[18] Excluding those sorties apportioned to USMC specific missions.

3.2.2 JSF HEADQUARTERS: INTERNAL COMMAND AND STAFF RELATIONSHIPS

The JSF Headquarters is organized around functional tasks and information flows. As opposed to the hierarchical C2 structures that have served the military for more than a hundred years, the JSF Headquarters will be based on a network-centric model that is composed of functional cells. Figure 3 depicts this network-centric model. The JSF Headquarters is composed of two elements: a *Deployable Element* and a *Fixed Element* that is permanently aligned with a geographic CINC. These split-based operations are enabled by assured connectivity and information technologies that facilitate in-stride planning and execution through a distributed and collaborative C2 network
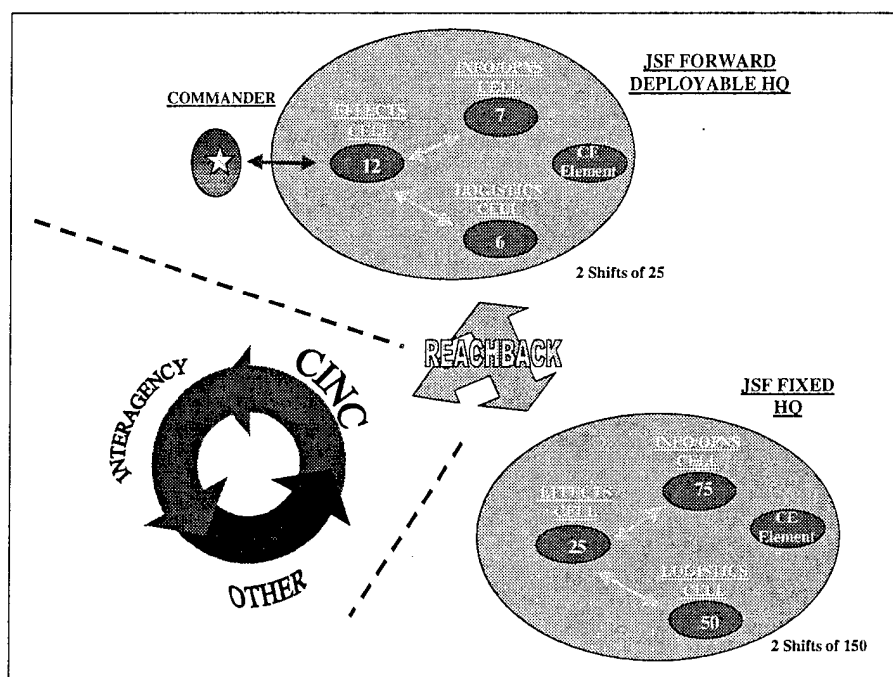
Figure 3. The JSF Network-Centric Model for Command and Control

Organizationally, the JSF Deployable HQ and Fixed HQ Elements are nearly identical in design (see Table 1 on the next page). Within the Deployable and Fixed Headquarters Elements, the functions are broken down into three Cells—Effects, Information & Operations, and Logistics—that exist within a network of networks. The Cells within each HQ Element (Deployable and Fixed) are intended to breakdown the functional stovepipes associated with hierarchical command and control structures. The Cells are displayed inside a bigger bubble, as shown in the previous figure, to reinforce the concept of matrix-type organizations where no formal or informal barriers exist that would limit full cross-cell functionality.

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Table 1. JSF Headquarters Organization (Fixed and Deployable Elements)

JSF Fixed HQ Organization	JSF Deployable HQ	
Major Command	Major Command	
Commander	Commander	
Deputy Commander	Deputy Commander	
LNO		
Effects Cell		Effects Cell
I&O Cell	Battle Staff	I&O Cell
Logistics Cell		Logistics Cell
Joint Communications Organization	Joint Communications Organization	

3.2.3 COMMAND AND CONTROL CAPABILITIES

C2 Principles

The underlying principles for the command and control of the JSF can be found in the Adaptive Joint Command and Control (AJC2) concept:

> "If we can gain information superiority and other technological enhancements then we can achieve significant efficiencies in how joint force commanders organize their headquarters and task organize their joint forces for operations."[19]

The JSF Headquarters is organized around the flow of information to facilitate decision making and enhance military force effectiveness. Additionally, it takes on some unique characteristics because of the influence of information technologies, the necessity for distributed and collaborative operations, and the need to embed component commander functions into the JSF Headquarters. Other key considerations in JSF Headquarters design include the following:

- ▶ Standing Headquarters enable habitual relationships within the JSF and mitigate the weaknesses associated with traditional, *ad hoc* JTFs.

- ▶ Deployable Commanders are supported by smaller, flatter, more distributed staffs.

- ▶ Habitual relationships are formed with CINCs, Subordinate Commanders, and interagency players.

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[19] USJFCOM J9. November 1999. *A Concept Framework for Adaptive Joint Command and Control.* White paper. Norfolk, VA: USJFCOM J9.

▶ Rapid decision making is enabled by information technologies, Common Relevant Operational Picture (CROP), analysis and decision-making tools, and collaborative tools.

In the development of the JSF Headquarters, the JSF team examined and considered several models. The result was a nodal-designed headquarters (with both a Deployable and Fixed Elements) that was organized around information and functional relationships. It bears no resemblance to historical hierarchical headquarters designs.

To understand the roles and functions of the nodes (cells), it is necessary to define three words so they will be understood in context and not mistaken as to intent or purpose:

▶ **Information.** 1. Facts, data, or instructions in any medium or form. 2. The meaning that a human assigns to data by means of the known conventions used in their representation (JP 1-02).[20] 1. Data collected from the environment and processed into usable form (USA FM 100-6).[21]

▶ **Intelligence.** 1. The product resulting from the collection, processing, integration, analysis, evaluation, and interpretation of available information concerning foreign countries or areas. 2. Information and knowledge about an adversary obtained through observation, analysis and understanding (JP 1-02).[22]

▶ **Knowledge.** Information combined with context, education and experience.[23]

C2 Functions

The JSF Headquarters has five essential C2 functions: *Informing, Planning, Preparing, Executing* and *Assessing*. Different degrees of all five of these functions are performed in elements of both the Fixed Headquarters and the Deployable Headquarters. The subfunctions for each C2 function, as well as breakout of proportions (percentages) of these functions, are shown in Figure 4 and Figure 5 on the next page. By comparing the two figures, one can quickly visualize the primary roles of each element of the JSF Headquarters. In the Fixed HQ Element, the Deputy Commander and his staff are focused on *planning and preparing (75%)*. In the Deployable HQ Element, the JSF Commander and his Battle Staff are focused on preparing and executing (65%). These relationships (of percentages) help focus and refine the scope of C2 functions that are be-

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[20] JCS. *DOD Dictionary of Military and Associated Terms.* Joint Publication 1-02. Washington, DC: Joint Chiefs of Staff.

[21] USA, 1996. *Information Warfare.* FM 100-6. Washington, DC: Department of the Army.

[22] JCS. *DOD Dictionary of Military and Associated Terms.* Joint Publication 1-02. Washington, DC: Joint Chiefs of Staff.

[23] General Peter A. Kind, USA (Ret.). January 14, 1999. Briefing on Joint C2 Experimentation to Joint Advanced Warfighting Program, quoting Admiral Joseph Prueher. Alexandria, VA: Institute for Defense Analyses.

ing performed in each HQ Element; they are also useful in determining manning implications.
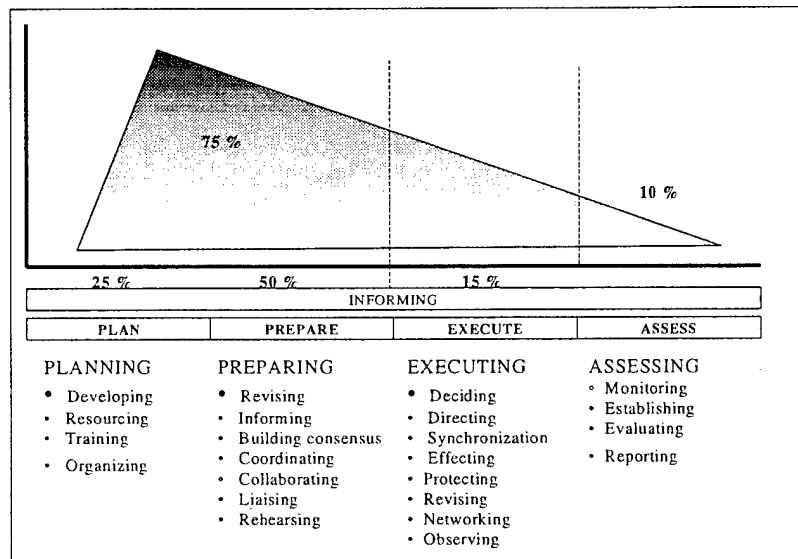

Figure 4. JSF Fixed HQ C2 Functions
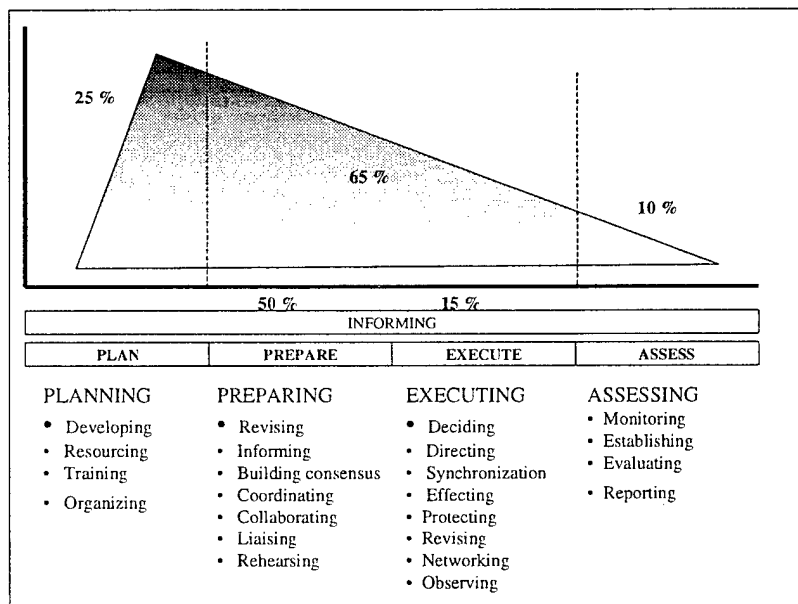
Figure 5. JSF Deployable HQ C2 Functions

3.3 COMPONENTS OF THE JSF HEADQUARTERS

3.3.1 THE COMMANDER

The JSF Commander's focus is on the operational campaign.[24] The actual location of the JSF Commander is immaterial—provided the information he needs and wants for command decisions is available to him when he wants it. Because of the JSF's robust communications network, the JSF Commander can situate himself at the location where he believes he can best execute his C2 functions.

As will be described later, the JSF Commander will surround himself with a relatively small forward battle staff. Through a robust and distributed command and control network, the Commander will oversee the planning and execution of an effect-based operational campaign plan. Two important items will enable the JSF Commander to accomplish his mission:

► The ability to gain and sustain information and situational dominance. This will be facilitated by a robust communications architecture, a shared CROP, collaboration planning tools, and automated decision aides and agents that will provide JSF Commanders with unparalleled access to information and decision-making support.

► The habitual command and staff relationships nurtured by the permanent nature of a JSF Headquarters. The fact that these headquarters are permanent will mitigate the *ad hoc* relationships and uncertain group dynamics that are typically associated with traditional JTF Headquarters.

Additionally, the JSF Commander will need to possess a thorough understanding of joint and interagency capabilities, the ability to command and control distributed forces (and coordinate with other federal agencies or non-governmental organizations), the ability to delegate responsibility and trust his subordinate commanders, an intimate knowledge of the terrain and cultures common in his theater of operations, and a willingness to exploit opportunities.

> *The overarching goal of the JSF Commander and his staff is to achieve the strategic and operational objectives articulated by the National Command Authority and the CINC. The JSF Headquarters will be functionally organized around information, but it will remain centered on the effective command and control of joint forces.*

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[24] The CINC remains focused on the Strategic Campaign and pursues his engagement strategy throughout his AOR.

3.3.2 INFORMATION & OPERATIONS CELL

The Information & Operations Cell (I&O Cell) is the product of a merger of the information (i.e., J-2) and operational (J-3, J-5) functions into a single organization. The purpose of the merger was to provide the JSF Commander with a more holistic approach to planning and conducting operations. Information, whether it is produced internally or externally, shall serve as the foundation for planning *and* situational awareness and understanding.

The JSF's I&O Cell will need to support the JSF leadership in a variety of ways. The I&O Cell will need to assess and fuse all-source intelligence, extract meaningful information from the intelligence, assist in the development of operational plans based on that information, and enable commanders to pursue dynamic operations against the adversary. Such a capability be realized through habitual working relationships (internal and networked) and the application information technology.

The Information Element

The Information Element, which is a node in a distributed and federated network of intelligence and analytic organizations, will use fused, all-source intelligence to develop a comprehensive and robust picture of potential adversaries. These "pictures" will present the adversary as a network of networks, with each node having a unique effect on the integrity of the network.

The Operations Element

The Operations Element, working with the members of the Information Element, will use this understanding of the adversary to develop courses of action that will affect the adversary's ability to achieve his political and military goals, diminish the adversary's civil and military infrastructure with a minimum amount of effort, and provide the JSF Major Commands with the information necessary to operate with local superiority.

3.3.3 EFFECTS CELL

The JSF Headquarters Effects Cell performs the current operations duties of the JSF. The cell is split between Deployable and Fixed Elements of the Headquarters; however, it should be noted that most of the functions of the cell are performed in the Deployable Headquarters. This Cell performs an active roll in the command of JSF operations by monitoring the battlespace through the CROP and the Common Tactical Picture (CTP). It will use adaptive command and control to dynamically retask JSF forces so that they may achieve the desired effects. When necessary, the Effects Cell will revise or direct changes to current plans based on the situation. A close relationship with the I&O Cell is required to ensure that future plans encompass and adequately address the anticipated operational environment.

3.3.4 LOGISTICS CELL

The JSF Headquarters is designed to ensure logistics and operations are truly integrated parts of a whole that maximizes combat power, operational reach, and tempo of operations for the JSF Commander. Command and control over deployment and logistics resources must be conducted under a joint structure that fits within the operational context of JSF. Service and component stovepipes must be integrated to increase responsiveness, flexibility, survivability, and efficiency. The logistics C2 network will enable the JSF Commander to have influence over the entire logistics pipeline, from the CONUS-based or theater source of supply to the Mobile Combat Service Support Elements that fills ground force requirements in the operations area. This will maximize the reach of JSF components while minimizing the support footprint in theater by eliminating or reducing duplication of logistics efforts among components.

The Logistics Cell will be divided into a (1) Deployable Element that is part of the JSF Deployable Headquarters and (2) a Rear Element that is located in the JSF Fixed Headquarters element. These organizations will plan and coordinate the execution of logistics-support functions to include transportation, supply, maintenance, engineering, medical and other support services. The Logistics Cell is part of a logistics command network that includes the theater CINC's Joint Theater Logistics Management (JTLM) organization. The purpose of this network is to integrate and synchronize the sourcing of mobility and logistics support from widely distributed sources including Transportation Command (TRANSCOM), the Defense Logistics Agency, Service depots, CONUS-based commercial vendors, theater-based contracting, host nation military and commercial support, and component assets.

The networked relationship between support resources and the organizations that control deployment and logistics assets and supporting infrastructure is depicted in Figure 8 on the next page. The backbone for logistics command and control will run from the theater JTLM organization to the Logistics Cell Element in the JSF Fixed Headquarters to the Logistics Cell Element in the JSF Deployable Headquarters to the support elements in the operations area.

3.3.5 LIAISON OFFICER TEAMS

Commanders have long recognized the importance of Liaison Officers (LNOs). In the JSF concept, they act as the JSF's ongoing link to the CINC, the Services, national agencies, and coalition partners. Liaison officers will be permanently stationed within select national-level organizations (e.g., TRANSCOM, Defense Logistics Agency (DLA), Defense Intelligence Agency (DIA), Central Intelligence Agency (CIA), National Imagery and Mapping Agency (NIMA), Joint Warfare Analysis Center (JWAC). These permanent LNO relationships will enable the JSF to enjoy habitual relationships with the organizations that will support them in times of crisis and conflict. Additionally, the JSF Headquarters will have permanent "plug in" billets for interagency support, thus enabling the

JSF to quickly incorporate the knowledge, skill, and expertise resident in the external supporting agencies and organizations.

3.3.6 MAJOR COMMANDS/FUNCTIONAL COMMANDS

In addition to the Deployable and Fixed Elements of the JSF Headquarters, synchronized and aligned joint forces represent the final elements of the JSF Headquarters. Referred to as Major or Functional Commands, these organizations are Service-provided allocated and apportioned forces that make up the subordinate warfighting forces of the JSF. Each Major Command under the JSF Headquarters executes the tactical-level missions in support of the operational mission and strategic objectives. The Major Commands are task force-like organizations with subordinate Joint Forces under their command. To meet the JSF's rapid deployment timeline (24 to 96 hours), Tier II and Tier III level forces (that populate the Major Commands) will be both theatre and CONUS based.[25]
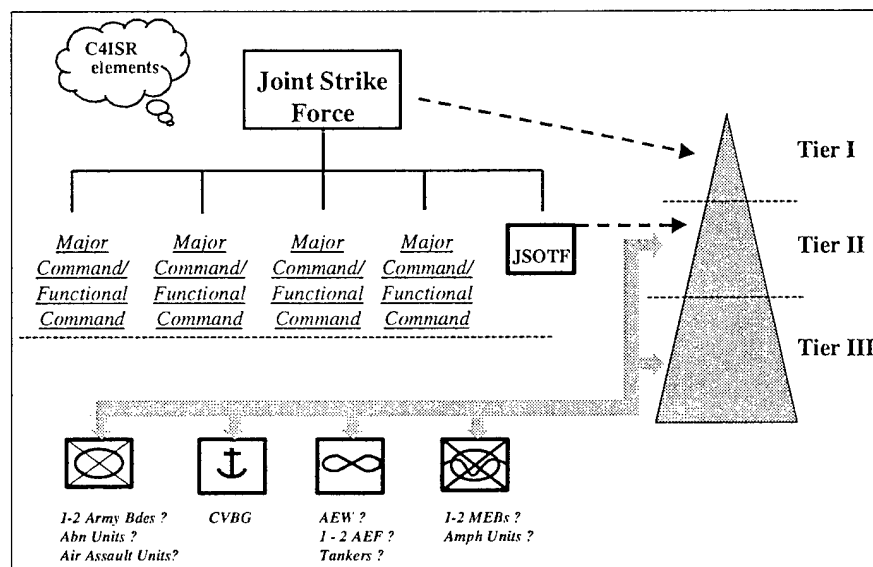
Figure 6. JSF and Service-Allocated and CONUS-Based Forces

Tier I forces are the JSF Headquarters and its Communications Elements. Tier II is composed of allocated forces (land, maritime, and air) within the CINC's AOR and Special Operations Forces. Additionally, some CONUS-based units with specific capabilities will also be categorized as Tier II forces. Tier III will be composed of CONUS-based apportioned joint forces.

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[25] USMC believes that the proposed organization "...confuses chains of command, violates unit integrity, and gives excessive centralized control to the JSF Headquarters."

The commands subordinate to the JSF are intentionally called Major Commands so they are not confused with Component Level Commands (Joint Force Land Component Command (JFLCC); Joint Force Air Component Command (JFACC); Joint Force Maritime Component Command (JFMCC); or Service-Specific Commands (Army Forces (ARFOR); Navy Forces (NAVFOR); Air Force Forces (AFFOR); Maritime Forces (MARFOR). The Major Commands are responsible for executing JSF-directed missions with allocated forces. They still have a planning function, but a larger share of the planning and coordinating functions is embedded in the JSF Headquarters elements. For example, a Major Command might be given the air superiority mission. In support of this mission, he would be allocated specific USAF, USN, and USMC aircraft, USN long-range surface and sub-surface fires, and USA Air Defense Assets. He would focus his efforts on the air superiority mission, leaving the more consuming tasks, Air Tasking Order/Integrated Tasking Order (ATO/ITO) development, targeting, etc., to organizations embedded in the JSF Headquarters.

3.3.7 JOINT COMMUNICATIONS ORGANIZATIONS

The JSF Joint Communications Element resides in both the Deployable HQ Element and in the Fixed HQ Element. Its sole purpose is to provide assured and secure communications (both voice and digital) between the CINC and the JSF; between the Deployable and Fixed Elements of the JSF Headquarters; between and among the subordinate Commands; between the JSF and other US government agencies, allies/coalition partners, and non-government organizations and private voluntary organizations. The JSF Joint Communications Element would provide communication services identical to those currently provided by the Joint Communications Support Element except that these capabilities would be reside with the JSF in the CINC's AOR, and they would provide standard CINC AOR-based C4ISR networks that subordinate forces would "plug" into once activated for planning or upon arrival into the JOA. This intent of this Element is to address the historical communications interoperability problems associated with the stand-up of Joint Task Forces, and to establish the means for determining the needs for future "born joint" C4ISR systems.

3.4 FUNCTIONS WITHIN THE JSF HEADQUARTERS

3.4.1 JSF FIXED HQ

The JSF Fixed HQ Element consists of a Deputy Commander, an Effects Cell, an Information & Operations Cell, a Logistics Cell, the Special Staff, and a Communication Element. The JSF Fixed HQ Element could consist of some 300[26] soldiers, marines, sailors, airmen, and civilians who are broken down into two 150-person shifts. Previously, Figure 4 showed a possible distribution of the manpower based on percentage of func-

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[26] The number "300," which represents two shifts of 150, is an arbitrary number selected to act as a forcing function. The actual staffing of the JSF Headquarters can only be decided through further exploration and experimentation.

tions performed (Deployable HQ vs. Fixed HQ). To achieve a JSF Headquarters for each of the five warfighting CINCs, it is anticipated that it will require approximately 1,800 Joint/Service manpower spaces.

3.4.1.1   The Effects Cell

The Fixed Element of the Effects Cell performs many of the functions traditionally left to the Joint Component Commanders in the role of battle management and planning. These functions include:

► Creating the Air Campaign Plan. The Effects Cell, in conjunction with the CAOL, will operationalize the ATO/ITO by apportioning forces to the JSF Commander and by de-conflicting and coordinating the order with the Major Commands.

► Coordinating the movement of forces and their re-supply with the Logistics Cell.

► Assessing battle damage assessment. The fixed element of the Effects Cell, in conjunction and cooperation with the I&O Cell and the Major Commands, will perform battle damage assessment and coordinate follow-on strikes.

► Manage Information Operations. The Fixed Element of the Effects Cell would be the primary C2 location for many of the Information Warfare functions such as computer network attack, psychological operations, and operational deception plans.

The Effects Cell will be the primary headquarters cell to monitor and control of the following operational tasks from the Uniform Joint Task List (UJTL):

- Conduct Operational Maneuver

- Control or Dominate Operationally Significant Areas

- Acquire and Communicate Operational Level Information and Maintain Status

- Provide Operational Aerospace and Missile Defense

- Provide Operational Mobility

- Conduct Joint Force Targeting

- Access Operational Situation

- Provide Protection for Operational Forces, Means and Non-combatants

- Provide Operational Counter Mobility

- Attack Operational Targets

- Command Subordinate Operational Forces

- Conduct Deception in Support of Subordinate Campaigns and Major Operations

- Provide Security for Operational Forces and Means

In addition, the Effects Cell will function as either the following boards and cells or else chair a virtual equivalent utilizing the collaborative planning capability of JAC2 networks:

▶ Joint Search and Rescue Center

▶ Rules of Engagement Cell

▶ Joint Operations Center

▶ Civil-Military Operations Center

▶ Joint Targeting Coordination Board

▶ Joint Fires Element

3.4.1.2 The I&O Cell

The Fixed Element is the larger of the I&O Cell's two components (the other being the Deployable I&O Cell). It will be located in a secure facility and will be capable of supporting operations throughout the AOR. The Fixed Element will be responsible for:

▶ collecting and analyzing the intelligence collected by organic RSTA assets;

▶ interfacing with theater, national, and combined intelligence agencies;

▶ "operationalizing" the intelligence into actionable plans for the JSF Commander's consideration and implementation; and

▶ disseminating information to warfighters in support of JSF operations.

To realize this type of capability, the Fixed Element of the I&O Cell will be composed of several types of civilian and military professionals:

▶ **Intelligence analysts.** A relatively small portion of the staff will be "traditional" intelligence analysts capable of interpreting and analyzing raw intelligence. The reason for the small number is that large-scale intelligence collection and analysis can be done better by organizations and agencies outside of the JSF (e.g., DIA, CIA). The majority of the analysts in the Fixed Cell will be charged with collecting, assessing, and "operationalizing" finished intelligence.

▶ **Engineers.** Engineers provide mobility, survivability, and countermobility to the subordinate task forces. Engineers within the I&O Cell will provide intelligence professionals and planners with their expert opinion regarding engineering-related tasks and issues.

- **Planners.** Planners are military professionals with experience in planning military operations. Because the JSF is an inherently joint organization, planners in the I&O Cell will need to be familiar with and comfortable with using capabilities resident outside of their own Service. Each of the Services will be represented—and this should enable combined-arms warfare on a grand scale.

- **Information managers.** As the amount of information available to commanders, intelligence professionals, and planners becomes more abundant and information technologies become more complicated, it will be necessary for someone to manage the flow and storage of data and information within the JSF. Information managers will perform this function in support of JSF operations.

- **Situation-dependent personnel.** These personnel are contracted to the JSF to provide intelligence support on a case-by-case basis. Some of the personnel that might fall into this category are academics who are regional or subject matter experts; members of industry who developed and constructed the infrastructure within an area of operations; or members of non-governmental organizations who have previously worked within an area of operations. This ability to reach out (or back) to experts would allow the JSF to rapidly develop a HUMINT-like capability without the costs traditionally associated with HUMINT (e.g., time to develop assets, cost).

- **LNOs.** The I&O Cell staff will be augmented and enhanced by the presence and contributions of LNOs. By making the I&O Cell a node in a distributed and federated network of intelligence agencies and organizations, the JSF should be able to access, collect, and employ information more rapidly than previous joint task forces.

Because the JSF will be fielded in the 2004 to 2007 timeframe, it is difficult to conceptualize, develop, test, evaluate, acquire, and deploy many new intelligence, surveillance, and reconnaissance (ISR) systems. However, this is not to say that ISR systems and technologies will remain static. On the contrary: advances in information management, coupled with new approaches to interagency working relationships (as defined in *PDD 56*) and the acquisition of large number of relatively inexpensive ISR systems (e.g., unmanned aerial vehicles (UAVs), unattended ground sensors (UGS), will enable the JSF to plan and execute its operations with a higher degree of strategic, operational, and tactical situational knowledge and awareness than has been previously available.

Through its habitual relationship with the JSF Command Staff, the Fixed Element of the I&O Cell will be able to provide the Commander with a level of confidence in the intelligence he receives that is unachievable when someone unfamiliar to the Commander delivers the intelligence. The Fixed Element will also have LNOs from various theater (i.e., CINC's staff), national, and allied organizations and agencies assigned to it so that the JSF Information Cell will have permanent and standard means of tapping into these

agencies. Such a habitual relationship with these organizations and agencies is intended to facilitate access to information in times of crisis and conflict. Likewise, the I&O Cell will detail a portion of its officers to the same various theater, national, and allied organizations and agencies in order to facilitate the flow of information from producers and analysts of intelligence to its consumers. Thus, the Fixed Element will be one node in a distributed and federated network of intelligence agencies (Figure 7).
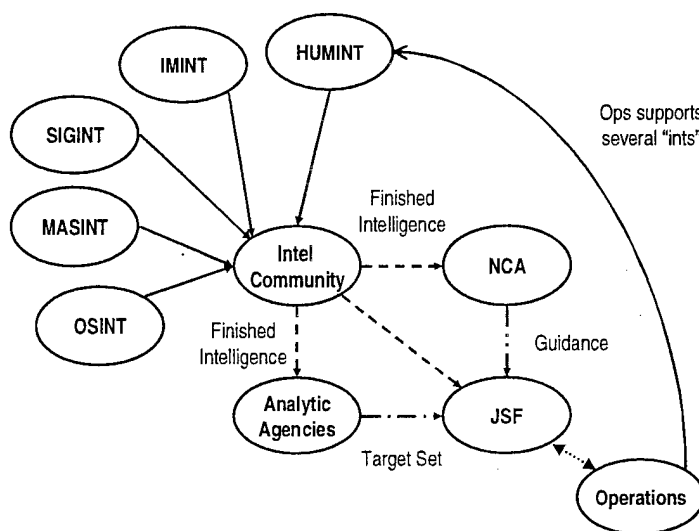
Figure 7. JSF As a Node in an Intelligence Network

The I&O Cell will play an integral role in the planning process. As that the JSF will view the adversary as a network of networks, it will be necessary for part of the JSF staff to understand what nodes are important to the adversary and why they are important. The Fixed Element—through its association with intelligence and analytic agencies—will be the organization most capable of explaining how the JSF can realize the desired effects of an operation. By "operationalizing" intelligence, the JSF will be able to achieve its desired effects with a minimum of effort.

The Operations Element of the Fixed I&O Cell is most active during peacetime, predeployment, deployment, operations handover, and redeployment of the JSF. During the employment phase of JSF operations, the Operations Element of the I&O Cell, in conjunction with the Execution Cell, is focused on planning future operations, conducting required virtual board and center functions, including the following:

► Joint Fires Network (Joint Targeting and Coordination Board)

► Joint Planning Group

► Joint Communications Control Center

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- ► Information Operations Cell

- ► Joint Operations Center

- ► Joint ROE (Rules of Engagement) Cell

- ► Civil-Military Operations Center

Additionally, the Operations Element will be responsible for performing some measure of the functions previously performed by the component commands (JFACC, JFMCC, JFLCC):

- ► During peacetime the Operations Element is focused on JSF training, both for the staff and in support of CINC-directed training exercises.

- ► During pre-deployment, deployment, and redeployment, this Element is principally engaged with the Logistics Cell in managing the CINC-directed and NCA-approved forces.

- ► During transition operations, this Element will be responsible for the seamless hand-over of responsibilities from the JSF Deployable HQ to a heavier force, a non-governmental organization or private voluntary organization, or to a Peacekeeping Force.

Additionally, the Information Warfare planning functions are performed in this Cell. Coordination of the collection plan with a new functional responsibility (sensor management) is also an important responsibility of this element. Close coordination between the Execution Cell and the I&O Cell is essential to ensure that the Commander Critical Information Requirements (CCIR) are met.

3.4.1.3 The Logistics Cell

The Fixed Element of the Logistics Cell will be co-located with the JSF Fixed HQ. This Element will coordinate, synchronize, integrate, and direct logistics resources under direct control of the JSF Commander. These resources will include assets that have been provided by the theater CINC in direct support of JSF operations, component logistics organizations, and joint support organizations tailored specifically to fill JSF mission, area, or unit logistics requirements.

The Fixed Element will also provide the link between the JTLM organization, the JSF Deployable HQ, and the support elements in the JOA. This will enable the JSF to reduce the logistics footprint in the operations area by reaching back to theater and CONUS-based sources (Figure 8).
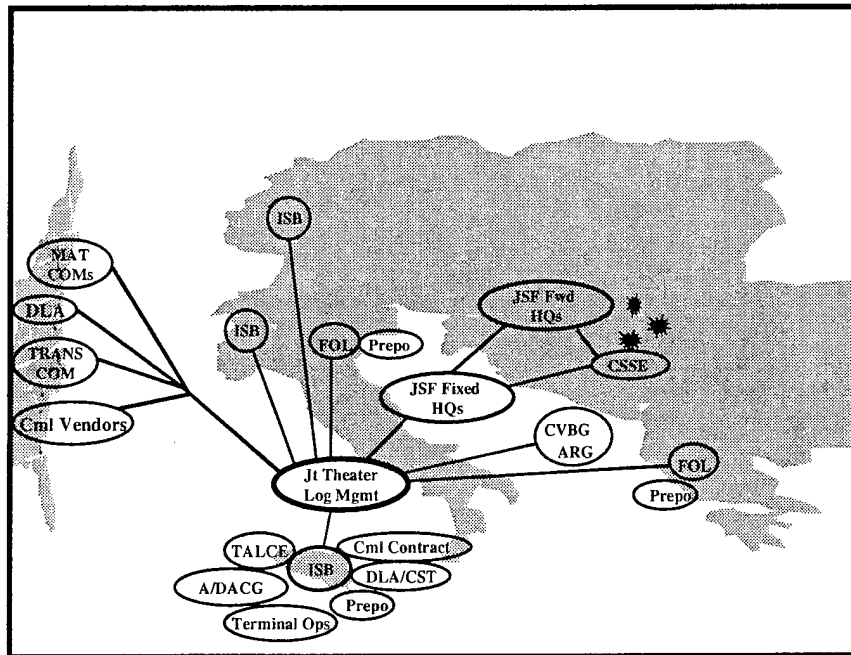
Figure 8. Logistics C2 Network

The JTLM concept is a critical component for achieving the operational concept of Focused Logistics described in *Joint Vision 2010* and *Joint Vision 2020*, and will be covered in further detail in Chapter 6. The JTLM will connect the following support organizations at Intermediate Staging Bases (ISBs) and Forward Operating Locations (FOLs):

▶ TRANSCOM's Mobility Control Center (MCC)

▶ Air Mobility Command's Tanker Airlift Control Elements (TALCE)

▶ Military Traffic Management Command's Contingency Response Teams (CRT)

▶ DLA's Contingency Support Teams (DCST)

▶ Military Sealift Command's Forward Support Offices

▶ Service port and terminal operations units

▶ Service materiel commands and distribution management units

▶ US and foreign-based civilian contractors that provide a wide range of theater support services

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Functions provided by the Fixed Element of the Logistics Cell include:

▶ Monitoring and maintaining the CROP for the logistics situation outside the operations area.

▶ Coordinating supply support to include rations and food service support; bulk and packaged petroleum and lubricants products; construction and barrier material; air, ground, and sea munitions; equipment pool for end item replacement; preventive and trauma medical supplies; and repair parts and components.

▶ Establishing Forward Support Bases and Forward Operating Bases that extend the distribution system linking strategic and theater-based sources with JSF elements in and around the JOA. This includes facilities for reception and staging of personnel and equipment, aircraft beddown, ship berthing, organizational workspaces, supply warehousing, and equipment maintenance.

▶ Coordinating maintenance support to include recovery, repair, and replacement of JSF assets.

▶ Coordinating mortuary affairs and personnel replacement for JSF components.

▶ Establishing a network of health service support facilities and evacuation centers in and around the JOA.

▶ Coordinating transportation support for JSF operations to include the integration of strategic air and sealift assets; intra-theater air, ground, and sealift assets; and tactical air, ground, and sealift assets.

▶ Coordinating host nation logistics support from military and commercial sources, and commercial support from CONUS-based contracting organizations.

The Logistics Cell's Fixed Element will also provide a critical function as the link between logistics execution and logistics planning. The Fixed Element will coordinate with the JSF Deployable Headquarters and components to consolidate JSF requirements and act as a clearing house for support requests, advising the Commander of near- and far-term shortfalls in resources and what logistics priority decisions must be made to support continuous operations. The logistics plans staff will coordinate with the Fixed Elements of the Effects Cell and the I&O Cell to develop estimates of supportability for future courses of action.

3.4.2 JSF DEPLOYABLE HQ

The JSF Deployable HQ Element consists of the Commander, his Battle Staff (Execution Cell, I&O Cell and the Logistics Cell), and a Communications Element (Figure 9).

This figure also portrays the relationship between decision making, understanding, synthesis, and awareness across the overall HQ Element. **Note:** Again, it is very important that the reader does not confuse the I&O Cell with Information Operations.
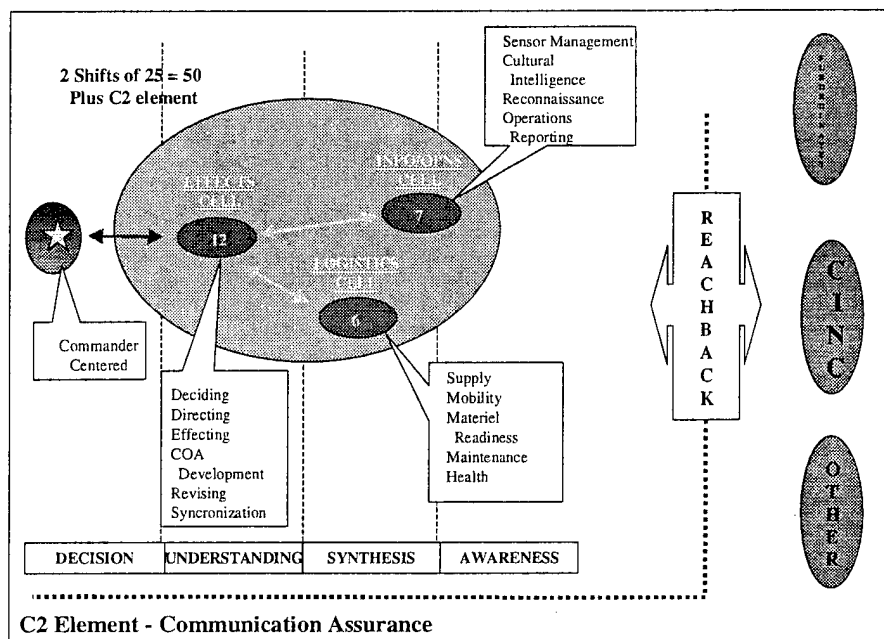
Figure 9. JSF Deployable HQ

Fundamental to the design of the JSF Headquarters is the combining of selected Intelligence Functions, Operations Functions, and Information Operations Functions into the I&O Cell. Some of the more traditional Operations Functions are now found in the Effects Cell (effects, necessary boards and centers). The Deployable Element consists of two shifts of 25 members for a total of 50[27] (52 counting the Commander and his Deputy Commander), plus the Communications Element (whose size is yet to be determined).

The application of joint effects will be commanded and controlled from the JSF Deployable HQ Element. This C2 platform can take a number of shapes. The most likely candidate is either an airborne platform or a sea-based platform. The actual platform will be dictated by the desired speed of execution.

 ►   If naval forward engagement forces were already present in the AOR, they would be the most likely candidates for the JSF Deployable HQ Element.

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[27] The number "50" (or two shifts of "25") is used as a forcing function to restrict the size of the JSF Headquarters Forward Element to an organization that could fit in an airborne command post or embarked on a C2 ship.

▶ If naval forces were not present and steaming time prevented them from arriving in a timely manner, an aerial platform would be the more appropriate choice for the JSF Deployable HQ Element.

The very nature of conducting Rapid Decisive Operations in a small-scale contingency (SSC) by the JSF results in a fairly quick event from the time the NCA gives the execute order until operational objectives are achieved or the fight is turned over to a more permanent headquarters (day and weeks vs. months). This dictates to some degree when and where the JSF Deployable HQ Element initially operates.

Functional Skill Sets

As depicted in Figure 10, the identification of *functional skill sets* is an attempt to demonstrate the various skill sets that will be required to reside in the Deployable Effects, I&O, and Logistics Cells. The skill sets represented in this figure are not the solution but an example. They were further refined during the JSF Red Team War Game and remain prime candidates for follow-on analysis. These particular skill sets have not been determined by any analytical means. Rather, they were determined based on the JSF Team's observations of a US Army war game[28] with a similarly designed headquarters, a review of the Operational Level Tasks outlined in the UJTL[29], and participation as staff member in the USMC Experimental Command Operations Center (ECOC).[30]

The JSF Team functionally aligned the Operational Level Tasks to the various Cells within both the Deployable and Fixed Elements of the JSF Headquarters. Purposely, there are some duplication of skill sets (Special Operations Force (SOF), Logistics (LOG) and Intelligence (INTEL) across the three Cells to ensure redundancy in the event of catastrophic failure in any one Cell.

The skill sets for the Fixed Element of the JSF Headquarters would be similar but they would be focused on the planning function, enabling the JSF Deployable Headquarters Element to focus primarily on execution.

As previously mentioned, the functions conducted by the three Cells in the Deployable or Fixed Elements will be similar in scope but different in level of function (planning vs. execution) and detail. With the focus on planning vs. execution, the JSF Team found necessary to decide on the manning and functions to ensure the JSF Commander has the right information at the right time to make the right decisions.

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[28] JSF Team observations were made during the US Army's Interim Brigade Combat Team Exercise conducted at Ft. Leavenworth, KS, May 10–19, 2000.

[29] CJSC. 1 October 1999. *Universal Joint Task List*, CJCSM 3500.04B.

[30] The ECOC is a functionally aligned HQ whose nucleus is a mission team consisting of a RSTA Coordinator, Intelligence Watch Officer, USMC Fires Officer, Air Officer, Naval Fires Officer, and Force Protections Officer. The ECOC has been observed by the JSF Teams during a number of Limited Operational Experiments.

JSF Forward Deployable HQ Element

INFO/OPNS CELL

PSY OPS/ CA

IW
SOF   COMMS

PLANS X 2   INTEL X 2

(8)

LOGISTICS CELL (ALT CP)

PLANS   OPNS
TRANS
MED   MAINT
         LOG
INTEL

(7)

Continuous
Collaboration

DEFINING
EFFECTS

CDR

EFFECTS CELL

ASC2   NONLETHAL
LOG   SOF   LETHAL
AIR   2IC   OPNS
LAND   INTEL
MARITIME   IW   ENG

(13)

**Functional
Skill
Sets**

+ Joint Communications Element
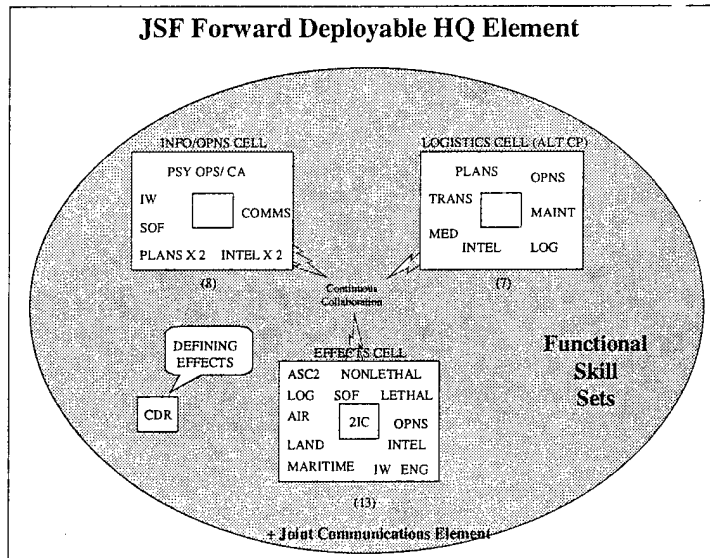
Figure 10.   JSF Deployable Functional Skill Sets

3.4.2.1   The Effects Cell

The Deployable Element of the Effects Cell is the Command Center for the JSF. In this role the Effects Cell monitors the joint battlespace, and coordinates and de-conflicts the current operations of the JSF. The Major Command executes the battle plans drawn up by the I&O Cell. The Effects Cell then monitors the execution of those plans, and through command by negation, ensures that duplication of effort is reduced and that targets of opportunity and emerging threats are attacked.

In the case of joint fires and effects, the Effects Cell monitors the Joint Fires Network and manages the cross-Command calls for fire. If a conflict occurs between Subordinate Commands, the Effects Cell will determine the best course of action and then order either the appropriate actions to be undertaken or else dynamically re-task units to cover a more critical threat. This decision is not made in a vacuum, however; utilizing the AJC2 network, the Effects Cell coordinates effects with the Major Command fire control elements.

3.4.2.2   The I&O Cell

The Deployable Element of the I&O Cell will perform two main functions:

▶   conducting and providing an initial assessment of local ISR operations and

▶   acting as a conduit between the JSF Commander and the Fixed Element of the I&O Cell.

The challenge in completing these two functions is that the Deployable Element will be as small and light as possible. To accomplish this, Deployable Elements will rely on

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theater, national, and combined assets as much as they rely on their own organic assets. The organic assets will focus on developing a flexible and robust tactical picture while the regional picture will be developed through the reliance on non-organic assets.

Conducting Local ISR Operations

The JSF will conduct local ISR operations using organic ISR assets. The organic ISR assets used in these operations include military intelligence professionals, UGSs (including robots), and UAVs. In the planning phase, the ISR Cell will identify the most likely responses to rapid, decisive operations against deep targets, using existing data and peacetime analyses. This analysis of likely responses will enable the Deployable Element to deploy its assets in the most effective manner. For example:

▶ UGSs might cover all avenues of approach to a target.

▶ Likely avenues of approach might also have electro-optical and infrared sensors (or SOF or recon teams) on station, thus allowing the Deployable Elements of the JSF to maintain eyes on areas of interest.

▶ The quantity and quality of approaches could be limited through kinetic strikes against specific nodes in the transportation network, thus degrading an adversary's ability to respond to a specific target site.

▶ Likewise, such strikes could funnel any adversary response to routes that are suitable for air and artillery strikes.

In any case, these electronic (or human) pickets could cue additional ISR assets (such as tactical UAVs assigned to the JSF, theater assets such as reconnaissance aircraft, or national assets such as satellites) to examine specific areas of interest in greater detail.

A second means of cueing ISR assets might be information pushed to the ISR cell by other intelligence organizations and agencies (e.g., a bit of HUMINT that reports planned troop movements against a particular target). This focused approach to intelligence collection and force protection will require that the JSF and any supporting forces to be capable of rapidly reacting to adversary movements.

Acting As a Conduit

The second function performed by the Deployable Element is that of a conduit between the JSF Deployable Headquarters and the Fixed Element of the I&O Cell. If secure and continuous communications links between CONUS and the Forward Deployable Element of the JSF are possible, then it makes little sense to bring the whole I&O Cell forward with the Commander. Collection from other agencies, analyses, and dissemination can all be accomplished through a distributed network. This will allow the I&O Cell to have a robust and permanent infrastructure. The Major Command staff must be capable of transmitting its Commander's intent to the Fixed Element of the I&O Cell, and must be able to explain the information compiled by the Fixed Element of the Informa-

tion Cell into a form that the Subordinate Commanders can understand and have confidence in. Therefore, the officers of the Deployable Element will need to be capable of establishing the local ISR network as planned by the Fixed Element, and knowledgeable enough about the various types of intelligence to translate intelligence assessments into information that is useful to the local Commander.

The Operations Element of the Deployable I&O Cell is a very small element, and it is dependent on its distributed twin in the JSF Fixed I&O Cell for support. It deploys during CINC- or JSF Commander-directed training exercises or during the actual employment of the JSF. During exercises and actual employment, its focus in conjunction with the Execution Cell is on the execution of the tactical fight to achieve operational objectives. It is also focused on the reconnaissance/counter-reconnaissance fight and on reporting (higher, lower, adjacent, coalition, allies). It participates as a virtual member in various board and centers, including the Joint Fires Network and the Joint Search and Rescue Center.

3.4.2.3 The Logistics Cell

The Logistics Cell's Deployable Element will be co-located with the JSF Deployable HQ, and will function as the Commander's primary source for logistics input for operations in the JOA. This element will be focused on supporting the execution of current operations by performing the following:

▶ Monitoring the logistics status of components and maneuver elements. This includes:

❑ Monitoring and maintaining logistics status of combat and support organizations within the operations area and updating the logistics CROP as required.

❑ Coordinating joint logistics support within the operations area by forming joint organizations or directing inter-Service support as required.

❑ Communicating logistics intelligence for resources secured from adversary or host country sources to the Fixed HQ Element for further analysis and planning.

❑ Then directing the most effective use of logistics resources available in the battlespace.

▶ Directing changes to plans based on dynamic situational understanding of the battlespace and shifting priorities. This includes communicating the Commander's priority of logistics effort and redirecting support between combat and support elements.

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▶ Integrate and synchronize the tactical support assets in the operations area with assets delivered strategically directly from CONUS-based sources and assets delivered from theater staging and support bases.

The Deployable Element will also provide a logistics assessment function of current operations. This will provide critical feedback to the JSF Commander on the tempo of operations and how far he can decisively reach into the battlespace with JSF elements. This assessment function will also provide feedback to the JSF Fixed Element on support plans for future operations.

3.5 REQUIREMENTS FOR A JSF

3.5.1 BASIC CAPABILITIES

The projected force structure for the 2007 timeframe furnished the building blocks for a mission-tailored force under JSF control. The first step for the JSF team was to identify the capabilities needed for a JSF. The following are prioritized, fundamental capabilities required for the JSF:

▶ JAC2

▶ Strategic agility

▶ Superb connectivity to establish an integrated information infrastructure

▶ An integrated suite of sensors

▶ An integrated weapons grid

▶ Decision superiority

Specific essential system capabilities include the following:

▶ Assured, secure, uninterrupted connectivity between all forces and platforms in the battlespace. The C4ISR[31] architecture must support collaboration during planning and distributed decision making during execution.

▶ A dynamic track management system for friendly, adversary, and neutral forces.

▶ The ability of all sensors and forces to provide accurate position locations.

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[31] Command, control, communications, computers, intelligence, surveillance, and reconnaissance.

► Availability of shared battlespace awareness by all users within the battle-space.

► Near real-time de-confliction of aircraft and fires.

► Full system compatibility and interoperability with joint, combined, and Service C2 systems.

The JSF concept makes *interoperability* an essential element in its organizational design, particularly in the areas depicted in the next table.

Table 2.   Interoperability

Area	Current Standards	Yet To Be Standardized
Standard databases	JCDB, C2 Core Data Model	modernized integrated data base
Standard messages	USMTF, JVMF, OTH Gold	—
Standard interfaces	—	radio waveform, data interfaces
Compliancy	Joint Technical Architecture	—
Common equipment	Joint Tactical Radio System (JTRS)	—
Interoperability	—	Service to Service; and Service to coalition systems

3.5.2   C2 TECHNOLOGIES

The JSF Headquarters will be equipped with GSSC and Global Broadcast System (GBS) and other emerging information technologies integrated through translation devices necessary to ensure the required compatibility for information exchange. This equipment will be networked through a robust communications architecture that provides seamless connections between the JSF Headquarters (both forward and Fixed), the CINC's Headquarters, the Major Command Headquarters, national agencies, and with LNO teams. This system of systems will provide the backbone necessary to display the CROP in the level of detail necessary for the various levels of command. It will also provide the means through which collaborative planning through reachback can be achieved. The communications architecture assured by the Communications Elements provides the backbone necessary to achieve this reachback. The CROP, collaborative tools, and automated decision aides and agents provide the capability for the Deployable and Fixed Command Elements to sustain situational dominance, and they are the means to remain engaged with the CINC and other elements. Intelligent agents and information management and decision aids will analyze fused sensor data (national, theatre, and organic), thus enabling the JSF Commander and the Major Command Commanders to have unprecedented situational understanding.

The JSF Fixed HQ Element will be able to use automated Course of Action (COA) analysis tools as it develops follow-on plans and target lists. The JSF Fixed HQ Element is principally responsible for crisis action planning throughout the deployment sequence and for all follow-on deliberate planning, including the performance of all of the necessary board and center functions as well as those planning and coordination functions absorbed from the component commands.

The ability to achieve situational dominance should not be confused with an advocacy of strong centralized command and control of military forces. While the CROP will provide the means for centralized awareness, it is not intended to imply or endorse centralized execution. Instead, it is the *shared situational dominance* (provided by the CROP) that facilitates collaborative planning and decentralized execution on a scale that has yet been fully realized. Additionally, when situational dominance is combined with the Commander's intent, the Subordinate Commanders will actually have more flexibility to accomplish their unique but related objectives: they will have clear situational understanding of the relative positions, objectives, and plans of other friendly forces as well as those of the adversary's.

This situational dominance, when combined with the means to achieve desired effects, enables the JSF Commander to actually operate inside the adversary's decision cycle.

Chapter 4. Intelligence and Information[32]

Intelligence and information will be powerful enablers in the planning and execution of rapid and decisive operations. The JSF will leverage these enablers through traditional and innovative applications of collection systems and analytic techniques to ensure that subordinate commanders have the information necessary to support of the JSF Commander's concept of operations. This section of the Operational Concept describes how the JSF will collect and use intelligence and information. It will also detail how intelligence officers will be organized within the JSF.

4.1 INTELLIGENCE, INFORMATION, AND JSF OPERATIONS

Intelligence has been an integral and important component of military operations since the dawn of time. The JSF will employ all the traditional means of maximizing situational awareness. However, the JSF concept will also advocate some new and innovative approaches to maximizing situational awareness and understanding. These approaches shall be incorporated into three broad categories:

▶ the intelligence preparation of the battlespace (IPB),

▶ intelligence support for current and future operations, and

▶ operations in support of intelligence.

These approaches, when combined with traditional and other innovative intelligence collection systems and techniques, will enable the JSF to engage the adversary with a better sense of situational awareness and understanding than was previously possible.

4.1.1 INTELLIGENCE PREPARATION OF THE BATTLESPACE

Long a part of military planning, intelligence preparation of the battlespace will become an important part of the peacetime intelligence process. IPB will provide the warfighter with situational awareness and understanding based on a nodal analysis of the networks that could enable a potential adversary to effectively resist US and coalition military operations. Should a crisis develop into a conflict, the JSF will maneuver a suite of networked sensors to further enhance situational awareness and understanding. These

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[32] USN believes that all of the functions described in this chapter can be accomplished by a component commander – who can have a small team of intelligence professionals on his staff, with available "reach-back" to CONUS intelligence 'centers of excellence' as required.

sensors will enable the JSF to conduct operations, monitor the movement of friendly, adversarial, and neutral forces within the joint area of operations, and provide the I&O Cell with the information necessary to engage what would have once been considered fleeting targets.

IPB is the "...analytical methodology employed to reduce uncertainties concerning the adversary, environment, and terrain for all types of operations."[33] US Army doctrine notes that IPB is a continuous process that is conducted "prior to and during the command's initial planning for an operation" and throughout the "...conduct of the operation."[34]

However, when one considers the obvious and perceived changes in both the geo-strategic environment and the nature of modern military operations, it becomes apparent that the intelligent preparation of the battlespace must adapt to stay abreast of current and future military operations. The intelligence and information that is collected and analyzed during times of peace must be "operationalized" and stored in a way (e.g., a user-friendly format accessible to Service and Joint C2 systems) that is useful to joint forces (including the JSF). This should enable distributed and different military forces to move to an area of operations and engage the adversary in a more rapid manner with a higher degree of strategic, operational, and tactical certainty.

When US and allied forces were focused on the monolithic threat of the Soviet Union and its Warsaw Pact allies, IPB was relatively easy: the adversary was a coalition of nation states, and their militaries operated from fixed sites, followed a rigid military doctrine, and other stable characteristics. Since the end of the Cold War, these characteristics have become less and less common: America's adversaries (actual or aspiring) have learned from American and coalition operations in Panama, Iraq, Somalia, Bosnia, and Kosovo. Regional hegemons and non-state actors have replaced the Warsaw Pact and rigid Soviet military doctrine has given way to militias, street gangs, and terrorist cells.

Because of these changes, IPB is going to have to change to ensure that America's warfighters deploy to an area of operations with much improved situational awareness and understanding. Peacetime collection efforts will have to feed IPB for rapidly developing or unexpected contingencies.

Identifying individual nodes in a network will not be enough to realize the type of operations envisioned by the JSF Concept Development Team. Instead, there will be a noticeable shift in the nature and character of JSF's IPB. For example:

▶ Fused and de-conflicted all-source intelligence will be used by the JSF's I&O Cell to identify and characterize the relationships that exist between nodes in a

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[33] JCS. *JCS Publications 1-02: DoD Dictionary of Military and Associated Terms.*

[34] USA. 1994. *Intelligence Preparation of the Battlefield.* FM 34-130. Washington, DC: Department of the Army.

given network and the means that might be employed to influence the network. Fusion will require the various components of the US Intelligence Community and the national security establishment to combine and de-conflict the information they have collected into a product that will be useful for analysts, decision-makers, and military commanders. One concept that was well received was storing the information in a database that would feed a Web site-like, customizable operating picture.[35]

▶ Relationships between networks will be analyzed and characterized. These analyses will allow for the development of scalable and tailorable operational plans capable of realizing specific desired effects in any given network or set of networks.

▶ Finally, peacetime intelligence efforts will try to identify patterns in and tendencies of adversarial forces by studying historical data, exercises, and doctrine.[36] They will do this in an effort to characterize patterns that might be exploited by the JSF Commanders and planners in times of crisis and conflict.

Because this database will be used by warfighters at various levels, it should be capable of supporting collaborative planning tools. This type of operational support will provide DoD with a "backdoor to interoperability" and enable DoD to better plan and conduct joint operations. Furthermore, it will enable the JSF to operate in a distributed manner, thus reducing the logistics demand of moving a large headquarters forward and increasing OPTEMPO through collaborative planning.

4.1.2 INTELLIGENCE SUPPORT FOR CURRENT AND FUTURE OPERATIONS[37]

Once the decision to employ the JSF is made, intelligence support to current and future operations will become a priority within the JSF Headquarters. The JSF will employ two concepts for increasing situational awareness and understanding: the maneuver of sensors and the networking and cross-cueing of sensors.

The maneuver of sensors concept is not new. However, the JSF, employing existing and innovative technologies and employment concepts, will use sensors in an innovative way. Furthermore, the JSF will network their sensors to ensure the clearest picture of the battlespace that is possible. These concepts are not without their cost: the United States will need to acquire more sensors to realize the concept of intelligence operations that is envisioned within the JSF operational concept, and these sensors will need to be deployed to a theater as soon as the likelihood of conflict arises.

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[35] Notionally, the viewer of the operating picture could select the information that would appear on the screen. Items of interest (e.g., units, imagery, range fans, refugees) would be depicted as icons that would link the viewer to more information if it was so desired.

[36] It should be noted that in cases of non-traditional adversaries (e.g., militias, clans, gangs), such information might not be available.

[37] USN believes that "all of the functions addressed in this section can be accomplished by the regional component commander's staff."

4.1.2.1 Maneuver of Sensors

The maneuver of sensors will occur as soon as the JSF receives the order to execute operations against an adversary. In truth, the maneuver of some sensors (e.g., satellites) might occur well before the execute order is given. However, the rest will be maneuvered prior to or with the execute order. The maneuvering of sensors will serve six important functions:

Increase Situational Awareness and Understanding at the Site of Future Operations

Because the JSF will typically be deployed against larger forces, it will be necessary to ensure that peacetime and crisis intelligence regarding target sites is accurate. Sensors will be maneuvered to target sites to confirm and enhance peacetime intelligence just prior to the deployment of a task force to the target site. This will be accomplished by the maneuver of UAVs and airborne assets in such a way that they can confirm or refute peacetime or crisis estimates regarding the defenses of a given target site. The operations (i.e., maneuver of sensors and deployment of a task force) will need to be rapidly phased so that an adversary does not have the time to respond to the target prior to the arrival of the JSF task force.

Increase Situational Awareness and Understanding at the Site of Current Operations

Because the JSF will employ several task forces operating in a distributed manner to achieve operational and strategic goals, it will be necessary to provide these task force commanders with a high degree of situational awareness and understanding to ensure that their position is secure and not in imminent danger of being unexpectedly engaged by a larger adversary force. This shall be accomplished by the maneuver of UAVs and airborne assets over the area of operations and the deployment and employment of UGSs and robotic vehicles along likely avenues of approach (as determined by peacetime analyses). Figure 11 on the next page depicts such a scenario. **Note:** A task force commander may not always have direct control over these sensors. Rather, he will have access to the information that they are collecting. This capability will also enable the JSF Commander to assess how well operations are going and determine if plans need to be changed to ensure that operational and strategic objectives are realized.[38]

Monitor the Adversary's Response to JSF Operations

Because the JSF will employ small units in distributed manner to achieve operational and strategic objectives, it will be necessary to give the task force commanders and the JSF Headquarters a clear understanding of what is happening at and around the target site. This situational understanding would allow subordinate commanders to have a better understanding of the environment in which they are operating and enable higher head-

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[38]While increasing situational awareness at the target of operations is an objective of the maneuvering of sensors, it is not intended to advocate the micromanagement of task forces. Rather, the goal of this type of operation is to enable the JSF Commander to determine if the task force needs any type of additional support.

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quarters to support individual task forces in their defense of a target site. This shall be accomplished by performing the following:

▶ the maneuver of UAVs and airborne assets over the area of operations,

▶ the deployment and employment of UGSs and robotic vehicles along key avenues of approach, and,

▶ the deployment and employment of special forces to observe adversary movements.

These assets will be employed as a networked picket line, allowing the task force and the JSF Headquarters to engage enemy forces with stand-off munitions and, if need be, trade space for time.
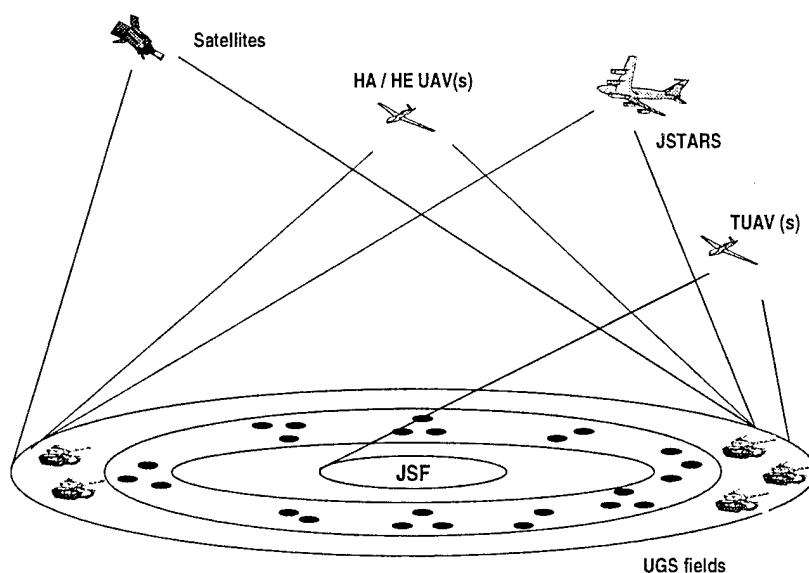
Figure 11.   Multi-Layered, Multi-Function Sensor Network

Enable Inorganic Support of Distributed Operations

In exchange for maintaining a high degree of operational mobility, it will be necessary for many of the ground-based task forces to remain lighter than traditional ground elements. Undoubtedly, lightening the force will require the sacrifice of some of the heavier systems and platforms.[39] However, if the JSF is able to maneuver sensors in support current and future operations as described previously, it should be possible to use this situational awareness to provide the task forces with inorganic support (e.g., the de-

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[39] The sacrifice of heavier systems and platforms is not meant to imply that these forces will be defenseless. They will simply use lighter systems and innovative technologies (e.g., "rockets in a box") to support their operations.

ployment of reinforcements, close air support, stand-off weapons). This ability to augment the task forces with inorganic support should reduce (but not eliminate) the risk inherent to conducting distributed operations with relatively small and light forces.

Enable the JSF to Engage Time-Critical Targets

Traditionally, US military forces have had difficulty engaging time-critical targets. Because the JSF will have a robust sensor network over and throughout the joint area of operations, it may be possible for the JSF to identify and engage time-critical targets with unprecedented effectiveness. In many cases, this capability will be realized through the networking and cross-cueing of sensors and the ability of the JSF Headquarters to dynamically retask sensor and strike assets.

Confuse the Adversary As to US Intentions

Finally, the overwhelming presence of sensors will likely complicate an adversary's attempts to defend against JSF task forces.

▶ If an adversary tries to respond to every location where sensors are deployed and employed, it will require him to disperse his forces (sometimes to locations of relative insignificance)—thus making it more difficult for the adversary to effectively respond to and engage JSF task forces.

▶ If the adversary chooses to ignore the sensors, then the JSF will posses a high level of situational awareness and understanding, thus enabling it (the JSF) to continue planning and executing rapid and decisive operations.

▶ Finally, if the JSF notices a trend in how an adversary responds to sensors and their relation to JSF operations, it will be possible to use the maneuver of sensors as part of a deception plan to draw adversary attention away from or to specific locations as desired.

The maneuver of sensors will support and enable the JSF's ability to plan and execute rapid, decisive operations. However, the maneuver of sensors (and their subsequent contribution to operations) depends on two factors:

▶ the ability of the JSF to deploy sensor systems to and within the JOA, and

▶ the ability of these sensor systems to be networked into a comprehensive sensor grid.

The deployment of sensors to and within the joint area of operations will be an essential precursor to the execution of rapid and decisive operations. To realize the objective capability, the deployment of sensors will be a priority for both the I&O Cell and the Logistics Cell. In many cases, there will already be a limited number of sensor systems in theater. However, it is likely that these systems will need to be augmented with other, inorganic sensors systems. This can be accomplished either through the strategic deploy-

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ment of sensor systems and platforms or through the use of coalition systems and platforms. The latter option could be problematic if interoperability issues are not addressed well in advance of the employment of these systems.

4.1.2.2   Networking and Cross-Cueing of Sensors

The second concept that will enable the JSF to develop and maintain situational awareness and understanding in the joint area of operations is the networking and cross-cueing of sensors systems. By networking and cross-cueing sensors, it may be possible for the JSF to reduce the number of operators necessary to control individual systems. For example:

> A UAV could be programmed to fly a specific route to a target. Once on station, the UAV would fly an predetermined orbit. If an unattended ground sensor in the area detected adversary movement (e.g., an armored vehicle), the UAV would automatically be maneuvered to gain additional information on the UGS initial cueing. The UGS would also alert the JSF Headquarters that a contact had been made, thus allowing a human to take over control of the UAV and further investigate the unattended ground sensors contact.

> If it was determined that the contact was a false alarm, the UAV operator could return the UAV to its predetermined orbit and return to other duties. This networking and cross-cueing of sensors should allow more efficient use of human personnel.

This type of sensor capability is not without its price. To develop and maintain this type of capability, the US will need to implement several reforms:

▶ **High-demand, low-density assets must become high-demand, appropriate density assets.** If a system is acknowledged as a high-demand, low-density asset, DoD must make the alleviation of this strain a priority. In some cases, this will require simply acquiring more platforms.[40] In other cases, this may mean looking for innovative approaches that will provide the JSF and task force commanders with the same capability although through different means.

▶ **Sensors should be developed and acquired as a system of systems.** For sensor systems to be networked, interoperability must be addressed in the design phase, not as an afterthought. This applies to both horizontal and vertical

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[40]This may be especially useful when the asset is relatively inexpensive (e.g., tactical UAVs). Personnel involved with Joint Experiment 9901 Attack Operations Against Critical Mobile Targets postulated that it was necessary to have a fleet of approximately 100 UAVs to monitor an area of approximately 280.000 square kilometers.

interoperability.[41] Thus, the development and acquisition of sensor systems should be "born joint."

▶ **Sensor systems should be as flexible as possible.** Sensors should be able to provide warfighters with the information they want, not just the information that is available. To achieve this goal, the development of sensor systems should differentiate between sensor platforms and sensor systems. By separating the payload from the platform intended to carry it, it will be possible to change the function of a sensor system as needed. For example, the preferred payload of a sensor platform might be an electro-optical sensor on some missions and a moving target indicator on others. Rather than have two separate, dedicated sensor systems, one could use a common platform and simply change sensor systems per mission requirements.

▶ **Task force commanders must have a real-time tasking capability and access to the supporting sensors' data.** An important aspect of enabling relatively small units to operate in a distributed environment is providing them with comprehensive situational awareness and understanding. This means giving them access to the data collected by sensor systems. This will require that sensor systems transmit information in formats that are readily received by the Task Force Commanders' C2 systems. This capability can be realized through the development and acquisition cycle (as described in the previous discussion on "born joint") or through the assignment of additional portable systems to the task force commander.

The deployment and employment of a robust sensor network in intended to provide the JSF Headquarters and the subordinate task forces with an unprecedented level of situational awareness and understanding. However, technical intelligence will not be the only form of intelligence that drives JSF operations. HUMINT will also play a vital role in realizing rapid and decisive operations, as discussed in the next section.

4.1.3 HUMINT AND JSF OPERATIONS

HUMINT is typically perceived as one of the most difficult and challenging forms of intelligence to obtain. Traditionally, HUMINT requires that an asset be identified, developed, and maintained. The JSF will shortcut the traditional means of obtaining HUMINT through (1) the execution of operations in support of intelligence and (2) the use of contractual agents. The HUMINT that the JSF receives will feed its situational awareness and understanding, and in some instances, to the point where it enables additional operations against an adversary. In some cases, this will involve seizing and searching specific nodes in an adversary network with the intent of finding exploitable information. In other

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[41] *Horizontal interoperability* refers to the ability of two similar platforms to communicate. For example, the ability of two different UGS systems to be networked. *Vertical interoperability* refers to the ability of two different types of sensor systems to be networked, e.g., a UGS alerting a UAV to a contact.

cases, it will simply involve tapping subject matter and cultural experts for a "HUMINT on demand" capability. Both of these capabilities will be supported by the acquisition and analyses of open-source intelligence and intelligence collected by other means.

Operations in Support of Intelligence

Because it will not always be possible to collect intelligence on some aspects of an adversary's capabilities through technical means, the JSF must be capable of acquiring the information it needs in a timely and effective manner. To realize this objective, the JSF will plan and execute operations in support of intelligence. In many cases, this will involve identifying a node in the network that the JSF wants additional information on and deploying a task force to seize and hold the target site. Once the target site is under US control, intelligence professionals will have unimpeded access to the facility. To improve situational awareness and understanding, the intelligence professionals may search the facility, interrogate prisoners held by the task force, examine and seize documents and electronic media, collect physical samples for later analyses, and install collection systems (e.g., "bugs") with the hope of collecting additional intelligence at a later time.

The goal of this type of operation will be to increase the JSF's understanding of a specific node in an adversary network. In a best case scenario, the information found at a target site will enable the JSF to plan and execute additional missions against other, previously unknown nodes in the adversary's network. This type of operation may prove to be invaluable when conducted against sensitive networks (e.g., the C2 network, the WMD production/storage network).

"Contractual HUMINT"

"Contractual HUMINT" is intended to enhance the JSF's awareness and/or understanding of a specific aspect of a target country or a specific network within that country. This form of HUMINT will be realized through the identification of experts (academic, professional, and military) on specific areas of interest. In some cases, the goal will be to develop a better understanding of the culture and social structure of a specific country or region. In other cases, the goal of this HUMINT will be to assess the nature and character of a specific network. In either case, these assets will be recruited either overtly or covertly and retained for as long as they are needed. Furthermore, these types of assets can be used as a reachback capability, enabling task force commanders in the field to obtain specific information from a knowledgeable party through the I&O Cell.

4.1.4 SUMMARY

Comprehensive intelligence preparation of the battlespace, robust sensor networks, and "HUMINT on demand" will enable the JSF to realize a high degree of situational awareness and understanding. Furthermore, the situational awareness and understanding will enable and drive JSF operations.

However, for any of these concepts to be fully realized, the JSF will need to organize its intelligence professionals in such a way that the right information gets to the right decision-maker in time for it to be of use. It is for that reason that the organization of intelligence professionals will be an important aspect of JSF Headquarters design. This topic is discussed in greater detail in the next section.

4.2   ORGANIZING FOR EFFECTIVE INTELLIGENCE

Because situational awareness and understanding are cornerstones of the JSF's ability to conduct rapid, decisive operations, intelligence professionals will play critical roles within the JSF's headquarters. Because the JSF's headquarters is divided into two components—the Deployable HQ and a Fixed HQ—different types of intelligence professionals performing different functions will be assigned to each of the two headquarters.

Within the JSF Deployable HQ, intelligence professionals will assume the role of *trusted advisors* to the JSF Commander. These intelligence professionals will convey the commander's information requirements to the JSF Fixed HQ, review the information and intelligence that is being forwarded to the JSF Deployable HQ by the JSF Fixed HQ, and bring time-sensitive information to the commander's attention in time. Support staff will operate the computers that link the Deployable HQ to the Fixed HQ, thus enabling the intelligence professionals to focus on intelligence vs. communications.

The intelligence professionals at the Fixed Headquarters perform the function of *hardworking agents.* Personnel will assess and analyze the raw intelligence collected by the various components of the JSF and sift through the finished intelligence provided to the JSF by the US Intelligence Community and coalition partners with the intent of filling the JSF Commander's information requirements. The intelligence professionals will also be responsible for working with the planners in the I&O Cell on such tasks as

- ▶ identifying the information requirements necessary for the realization of rapid and decisive operations,

- ▶ assessing the intelligence on which plans are developed,

- ▶ developing a sensor collection plan (i.e., tasking sensors to collect intelligence in support of current and future operations),

- ▶ identifying time-sensitive information and forwarding it to the Chief of the I&O Cell for his review, and

- ▶ working with other agencies and organizations to focus collection efforts and minimize inefficiencies in the collection and analyses of intelligence.

It should be noted that a relatively small amount of analyses will be performed by the JSF Fixed Headquarters: when possible, the JSF will leverage the expertise and manpower of the US Intelligence Community and allied intelligence agencies to feed its situ-

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ational awareness and understanding. Intelligence professionals in the JSF Headquarters filter intelligence so the commander receives the information he needs to make timely and sound command decisions (see Figure 12 on the next page). All relevant intelligence is stored in a common database so that warfighters and planners can access it to better plan and execute operations.

Liaison Teams

Because the intelligence component of the JSF is a single node in a distributed and federated intelligence network, it will be augmented by liaison officers. In some cases, the liaison officers will be assigned to the organizations and agencies that constitute the US Intelligence Community. In other cases, the liaison officers will be assigned to higher headquarters or even allied intelligence agencies. These liaison officers will enable the JSF to have a constant and habitual relationship with the producers of the intelligence on which their operations are based.

Augmentation Teams

A second form of liaison is the augmentation of the JSF's intelligence capability by interagency support teams (e.g., National Institute for Standard and Technology (NIST)). Depending on the size and scope of JSF operations, the CINC may designate the JSF Fixed Headquarters as the recipient of interagency support until the conflict escalates to a major theater war (in which NIST can be reassigned to the Joint Task Force responsible for expanding operations against the adversary) or de-escalates to a peacekeeping/humanitarian assistance operations. By augmenting the JSF's organic intelligence capability with liaisons and interagency support teams, the JSF should be able to more effectively achieve a unity of intelligence effort.
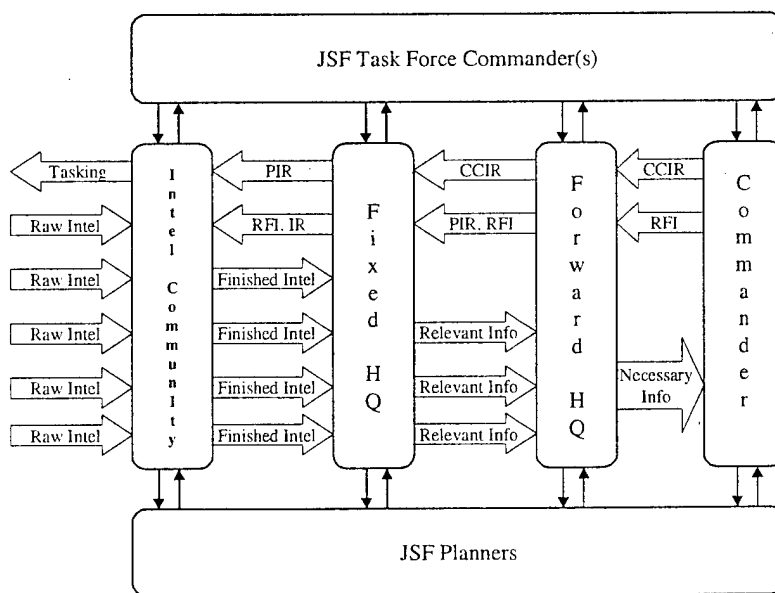
Figure 12.   Information Flow Through the JSF

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Summary

The JSF intelligence component is focused on fulfilling the commander's information requirements and pushing time-sensitive information forward to the commander in time for it to be of value. These objectives are accomplished by intelligence officers performing different functions at different locations. The intelligence officers attached to the Deployable HQ assume the role of trusted advisors whereas the intelligence officers attached to the Fixed Headquarters perform the role of hardworking agents. The intelligence officers assigned to the JSF are augmented by two types of liaison officers: (1) the first type being intelligence officers assigned to the JSF but attached to intelligence organizations and agencies and (2) the second type being interagency teams attached to the JSF in times of crisis and conflict.

Chapter 5.   Effects Planning and Execution

Desired effects are the result of the deliberate application of kinetic and non-kinetic means against a specific target or target set, with the intent of achieving a specific outcome in support of the Commander's intent or national objectives. Identifying and planning for desired effects should be an integral component of the operations plan and should be synchronized with other elements of the plan, particularly the scheme of maneuver. This chapter examines effects planning and execution.

5.1   STRATEGIC, OPERATIONAL, AND TACTICAL JSF APPLICATIONS

5.1.1   STRATEGIC APPLICATIONS

The NCAs can use the JSF as a *strategic preclusion force*—that is to say that the rapid deployment of the JSF to a crisis (in conjunction with aggressive information operations) could limit and/or close the courses of action open to an adversary, thus altering his strategic calculations. Such an action could either prevent the crisis from degenerating into a conflict or quickly resolve the conflict.[42]. The key to the strategic application of the JSF lies in the synergistic application of sea, air, ground, cyber, and space assets in a rapidly phased and concerted manner. The initial and continued use of air power, maritime forces, and information operations will impede an adversary's ability to realize his operational and strategic goals. These actions will also allow for early arriving ground forces to deploy to critical points, further complicating the adversary's operational environment. These joint forces will contribute to combined arms warfare on a grand scale—ground forces will facilitate aerial operations, and air forces and remote fires will facilitate ground maneuver.

5.1.2   OPERATIONAL APPLICATIONS

The operational objective of JSF operations will be to deny the adversary potential courses of action. This will be done with a combination of information operations, precision fires, and precision maneuvers—the essence of precision engagement.[43] For example, as an adversary's attacking force maneuvers to gain positional advantage, its movement is impeded by precision fires. Additionally, kinetic and non-kinetic attacks

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[42] USA. 1999. *Army Strategic Planning Guidance '99* (Draft). Washington, DC: Department of the Army. As quoted in Riggins, J. and D.E. Snodgrass. 1999. Halt Phase Plus Strategic Preclusion: Joint Solution for a Joint Problem. *Parameters.* Autumn 1999. Pages 70–85.

[43] CJCS. 2000. *Joint Vision 2020.* Washington, DC: US Government Printing Office. Pages 22–23.

suppress the adversary's air defenses. These actions allow the JSF's small, discrete, autonomous and highly lethal mobile combat elements to occupy or control specific and important nodes in some of all of the networks that constitute the adversary's political and military support structure..

5.1.3 TACTICAL JSF OPERATIONS

The tactical objective of JSF operations is to contribute to the operational and strategic "nodal dissection" of an adversary's political and military infrastructure. The goals of these tactical operations are to find, influence, neutralize, or destroy specific nodes that the adversary must have to effectively conduct his planned operations. Because the JSF is an effects-based force, tactical operations could be in the form of kinetic or non-kinetic, lethal or non-lethal strike strikes.

To do this, the JSF, in conjunction with military and civilian intelligence organizations and agencies, first determines the adversary's capabilities and vulnerabilities. These analyses attempt to answer the question: What operations will the JSF have to plan and conduct to limit or close the course of action open to an adversary? Tactical units are then employed in support of the JSF Commander's concept of operations, engaging or influencing the adversary's courses of action so that desired effects might be realized. The JJSF also makes extensive use of unmanned vehicles (both air and ground) so that units can be dynamically re-tasked in support of the concept of operations. Adversary units can also be determined by reconnaissance by fire when necessary. The JSF will conduct decisive, overwhelming combat operations at the time and place of its choosing. When necessary, JSF subordinate task forces will eliminate adversary units in close combat using organic and inorganic assets.

5.2 INTEGRATED EFFECTS COORDINATION AND FIRE SUPPORT

Effects coordination and fire support[44] is the continuing process of planning, integrating, and orchestrating full spectrum (lethal and non-lethal, kinetic and non-kinetic) fires[45] in support of the combined arms operation to enable the achievement of the Commander's desired objectives. Precision strike and dominant maneuver provide the JSF an unmatched ability to dictate OPTEMPO. The JSF will have the capability to apply a combination of many forms of attack simultaneously against the adversary's capabilities and vulnerabilities so the opponent will be unable to cope. To achieve this operational condition, it is essential to synchronize lethal and non-lethal fires with the maneuver of supported forces. This process includes the management of delivery assets

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[44] "Joint Fire Support includes those fires that assist land and amphibious forces to maneuver and control territory, populations, and key waters. Joint fire support can include the lethal or destructive operations of close air support (by both fixed-wing and rotary-wing aircraft), naval gunfire, artillery, mortars, rockets, and missiles, as well as non-lethal or disruptive operations such as IO." Joint Pub 3-0, p. IV-16.

[45] Fires refers to the delivery of all types of ordnance to include bombs, rockets, missiles, and artillery, as well as other non-lethal means against adversary targets at operational depths.

supported forces. This process includes the management of delivery assets and sensors, and direct coordination with the combined arms commanders.

The JSF employs *effects-based operations* to set the conditions to achieve national goals and objectives. Effects-based operations apply and leverage the synergy created by the employment of full-spectrum fires (lethal/non-lethal; kinetic/non-kinetic) and maneuver; this synergy enables decisive combined arms operations. The objective of effects-based operations is to realize a specific outcome in time and space through the deliberate application of military means. Fires and maneuver are essential components of the doctrinal elements of combat power: maneuver, firepower, protection and leadership. The notion of "effects" is a revolutionary approach that realizes the potential of non-lethal capabilities and their relevance to the changing nature of the threat and today's operational environment. Thus, the application of lethal and non-lethal fires to achieve specific effects must be fully nested within the JSF Commander's concept of operations.

Confronting an asymmetric adversary requires the commander to move beyond a traditional application of lethal force and to integrate other elements that can generate "non-traditional" combat power. The menu of non-lethal capabilities includes elements of information operations (IO) and related activities (e.g., public affairs, civil affairs). Leveraging these capabilities is a critical aspect to combined arms throughout the full spectrum of operations.

The JSF accomplishes effects coordination and fire support through two processes:

▶ The first process follows the effects coordination cycle to produce coordinated, de-conflicted effects based tasking order. This process is performed in the JSF Headquarters I&O Cell.

▶ The second process, performed by the JSF Headquarters Effects Cell, is the adaptive command and control of joint fires. In this process, the Effects Cell monitors the operational plan and operational environment and responds to unexpected operational needs (e.g., calls for fire, time critical targets, and targets of opportunity).

In addition to traditional kinetic fires, information operations (addressed in more detail later) is a fundamental capability that the JSF will employ. This information operations capability will be fully integrated into both the deliberate and adaptive effects coordination process. Digitized C4ISR is essential to responsive and precise effects, especially proactive counter-fire, and it will serve as the cornerstone of effect-based fires. Reachback technologies will assist in effects planning and execution before JSF employment, and throughout the entire JSF campaign. Planners and operators at organizations such as Joint Warfare Analysis Center, Joint Information Operations Center, Defense Intelligence Agency, US Space Command, and National Security Agency will provide support for JSF effects planning and execution.

5.2.1 THE EFFECTS COORDINATION CYCLE

Effects coordination is the process of selecting targets and matching the appropriate action against them. It takes into account strategic and operational requirements and capabilities and the threat to friendly forces imposed by the adversary. Effects coordination and planning occurs at all levels of command within the JSF and is performed by all levels by forces capable of effects targeting with both lethal and non-lethal disruptive and destructive means.

Effects targeting is complicated by the requirement to de-conflict duplicative targeting by different forces or different echelons within the same force, and to synchronize the attack of those targets with other components of the JSF. This effects coordination process should integrate capabilities and efforts of national, unified, joint force, and component commands, all of which possess varying capabilities and different requirements. The process known as the *targeting cycle*, which is adapted here for use by the JSF to achieve effects coordination, has six phases:

▶ **Commander's Guidance and Objectives.** Guidance and objectives from JSF Commander serve to initiate the effects planning cycle. This guidance serves to outline the effects desired to achieve the operational objectives. Objectives and guidance also drive effects priorities, establish restrictions for force employment, drive intelligence requirements, and provide criteria to measure objective attainment.

▶ **Target Development.** This phase focuses on knowing the adversary, and identifying and nominating critical elements of adversary target systems for attack. The target development phase involves systematic evaluation of all-source intelligence to identify potential target systems relevant to the commander's guidance and objectives.

▶ **Weaponeering Assessment.** In this phase, personnel quantify the expected results of lethal and non-lethal weapons and systems employment against prioritized targets.

▶ **Force Application.** Force application integrates the results of the earlier phases with operations planning data. Force application is conducted at the command, component, and unit level to fuse target, weapon system, and munitions and non-lethal force options. The JSF Commander is provided fused target intelligence and weapon system recommendations against a target system and its vulnerabilities.

▶ **Execution Planning and Force Execution.** Following the Commander's approval of force application recommendations, this next phase involves (1) final tasking order preparation and transmission and (2) specific mission planning and material preparation at the unit level.

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► **Combat Assessment.** CA is the determination of the overall effectiveness of force employment during military operation. Battle damage assessment (BDA) is one of the principle subordinate elements of CA.[46]

5.2.2 DELIBERATE EFFECTS BASED PLANNING

The deliberate effects based planning phase is made up of the first four phases of the targeting cycle described previously. After the JSF Commander determines his operational strategy and objectives, the JSF I&O Cell, in coordination with the component forces and units, develops effects-oriented tasking order (phases 2 through 5). These orders indicate the operations desired to achieve a particular effect on the adversary. Support from theater and national capabilities, not directly assigned to the JSF Commander, is requested from their controlling authority through pre-established procedures. The individual units assigned to the JSF are then given mission-type orders to achieve their objectives.

To achieve coordination and synchronization of the individual component plans, the JSF Commander uses a Joint Effects Coordination Board (JECB). The JECB is a virtual cell enabled by computer networks and collaborative programs. It is coordinated by the I&O Cell and is composed of representatives from the JSF's Deployable Headquarters, the Fixed HQ, and the Major Commands. Controlling authorities of capabilities outside the JSF Commander's control also participate in the JECB. The outcome of this process is a detailed tasking order that include preplanned (lethal/non-lethal; kinetic/non-kinetic) fires and maneuver to support the JSF Commander's concept of operations and enable the realization of desired effects. This process is cyclical, yet should be adaptable to the ebb and flow of operations. The JECB meets as is necessary to perform the functions described above.

5.2.3 THE ROLES OF VARIOUS AGENTS IN THE EFFECTS PLANNING AND EXECUTION CYCLE

JSF Commander and Staff

The JSF Commander's guidance and objectives will identify effects priorities, joint target list (JTL), planning guidance, procedures, appropriate maneuver and movement control, joint fire support coordinating measures, ROE, and what defines component direct support functions. This guidance will also include the JSF's air apportionment decision.

Because effects planning is cyclical, the JSF Commander and his staff must review CAs and review and revise, if necessary, targeting guidance, priorities, and objectives. The I&O Cell normally develops and maintains the JTL that contains prioritized effects.

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[46]JWC. 1997. *Joint Force Fires Coordinator Study.* Page II-3-4.

The I&O Cell is responsible for coordinating CA. The JSF Headquarters will organize and define the process used by the JECB.

JECB

The JECB is a virtual integrating center that utilizes collaborative planning tools to accomplish the broad effects coordination oversight functions, and to act as a JSF-level review mechanism. It is a joint activity composed of representatives from the JSF Headquarters staff, all components, and if required, subordinate units. The JECB reviews effects targeting information, develops targeting guidance and priorities, and may prepare and refine JTLs.

Components and Units

Components provide effects targeting requirements to support their assigned missions to the JSFC through the JECB process. To support the JSF campaign, all the components will have a basic understanding of the general concept of operations and each component's mission. Therefore, the components should provide the JSF a description of their direct support plan through the liaison elements within the JSF Headquarters. This basic understanding will allow for coordination and de-confliction of efforts between each component and within the JSF Headquarters staff and agencies.

The components and units are also responsible to the JSF Commander for the execution of their assigned missions in support of the overall effects plan. They will conduct detailed mission planning prior to execution. In addition, they will respond to direction from the Execution Cell of the JSF Headquarters for direct support, calls for fire, and changes to the operational campaign.

5.2.4 ADAPTIVE COMMAND AND CONTROL OF JOINT FIRES

Once the JSF Commander approves the force application recommendations, the units complete detailed execution planning and conduct their operations. The Effects Cell of the JSF Deployable HQ monitors the progress of the plan and performs assessment of the results based on the desired effects. The Effects Cell determines if branches and sequels to the plan are needed as operations progress; this same Cell also coordinates and de-conflicts changes.

In some instances, the JSF will have to react to a rapidly changing tactical situation. The appearance of time-critical targets in the battlespace, such as mobile missile launchers or late detection of adversary forces, may require the dynamic retasking of air, ground, sea, space, and information power. Such a response does not fit into the traditional deliberate planning methodology. Because the JSF deployment concept is based on the rapid deployment and employment of combat power, it is imperative that Service components be able to provide timely and accurate fire support. Close air support and naval surface fires will provide the majority of kinetic fires available to the JSF Commander in support of dynamic operations.

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Therefore, the relatively small size of the JSF, and the limited number of assets that can provide fires and fire support against a large array of targets, requires that the JSF Commander dynamically manage execution of fires. This execution management is conducted through a network of networks that provide for direct tasking and de-conflicting of these and pre-planned fires. An important capability of this force is an effects control and fire support network that can prosecute time-sensitive targets through effects-based operations.

5.2.5 EFFECTS CONTROL AND FIRE SUPPORT NETWORK

The JSF produces effects and accomplishes fire support control and coordination through a network of networks (see Figure 13). This network provides commanders and fire support elements with a common, real-time battlespace picture. It also links to target acquisition and intelligence systems to fire support elements and facilitates the coordination and control of aviation, naval surface, and ground-based fires.
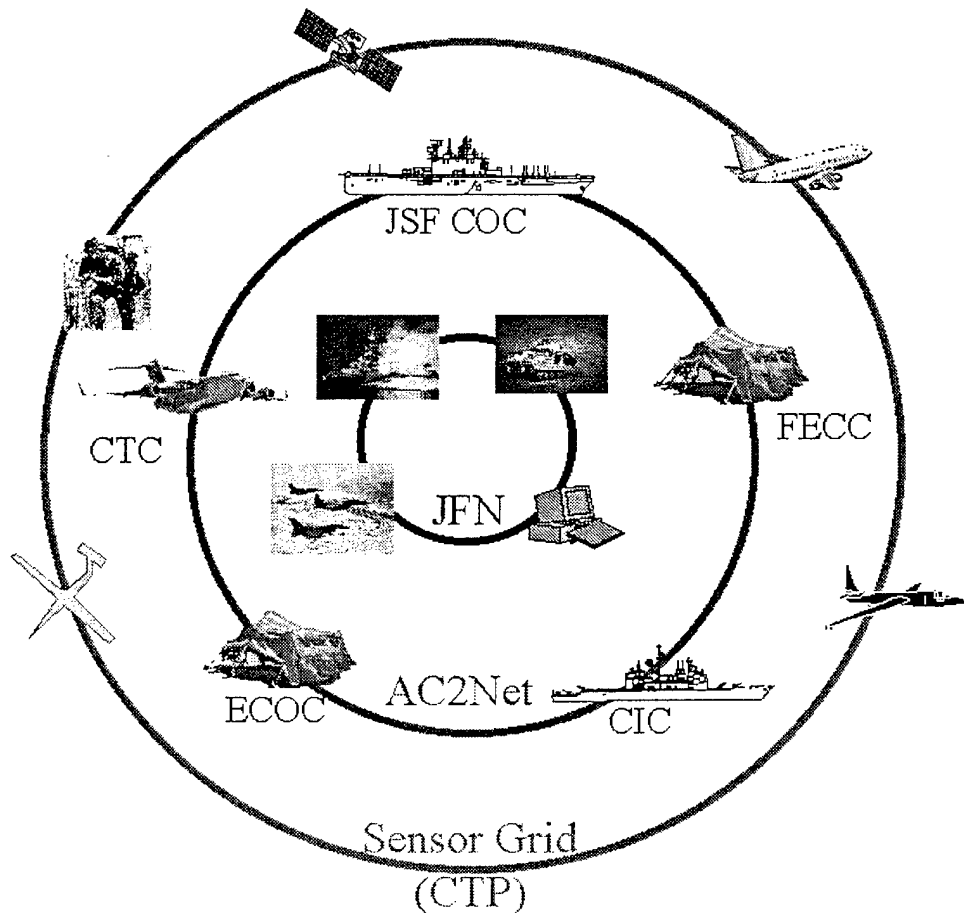
Figure 13. JSF Effects Control and Fire Support Network

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The individual Service component coordination cells will utilize their organic fires to engage targets treating their force or within their weapons range, depending upon their doctrine and capability. The target guidance priorities established by the JECB are distributed to the components so they can be used to form an attack guidance matrix so that any level can make a call for fire. If a particular component is unable to service a target, they can call upon other Service capabilities via the respective fire control centers that are tied into the network. These cells include the following:

- ▶ Army Fires and Effects Coordination Cell (FECC)

- ▶ USMC Tactical Control Organization (TCO)

- ▶ Air Force Time Critical Targeting Cell (TCTC)

- ▶ Naval Ship Combat Information Center (CIC)

- ▶ Special Operations Task Force Control Center

The sensor grid, depicted by the outer loop in this figure, provides for a fusing of RSTA systems, intelligence networks, and tactical data networks into a common database. This database is used to develop a common tactical picture (CTP) that gives locations of adversary and friendly units. Assets that participate in this network include such resources as JSTARS, UAVs, U-2s, surveillance satellites, special operations forces, electronics intelligence (ELINT), and signal intelligence (SIGINT) sources. Examples of systems that provide data into the database are the Army Battle Control System (ABCS), Joint Tactical Information Distribution System (JTIDS), and Cooperative Engagement Capability (CEC).

The Joint Fires Network (JFN) (inner ring) is a network of interoperable systems such as Advanced Field Artillery Tactical Data System (AFATDS), Theater Battle Management Core System (TBMCS), and Land Attack Warfare System (LAWS) that allow visibility of the fires battlespace. It also includes information operations C2 capabilities as well as traditional fire control systems. To enable de-conflicting of fires, air space, and cyberspace, each force element will indicate, via the JFN, the status of their engagements. This status of ongoing fires within the JFN helps prevent duplication of effort and ensures that other forces operating in the vicinity are aware of operations. For instance, even though a maneuver battalion is firing its organic mortars at a target, aircraft flying through the zone en route to another mission need to know about the danger. When the maneuver battalion indicates its fire mission on the network, other forces are able to pick up that information and plan accordingly. The JFN uses the CTP database as its source of targets, neutrals, and friendly forces. Additionally, decision support tools such as the Navy's "Ring of Fire" concept will assist in rapid allocation of support.

The AJC2 Network (center ring) allows the Execution Cell of the JSF Headquarters to perform command and control in real time through command by negation. In this way,

the Execution Cell can monitor the fires picture and de-conflict or negate, if necessary, operations between components. This command methodology allows the unit commanders to engage local targets with organic systems, or request support from supporting units. The AJC2 system will include decision aids that allow for de-conflicting of air space, monitoring of weapons status, determining best weapon-target pairing, and collaborative planning tools such as white board, chat, and voice capability.

An example of this dynamic control capability occurs when an adversary tank force is detected by a UAV moving toward an Intermediate Brigade Combat Team (IBCT) company engaged in another operation.

▶ The data from the UAV automatically enters into the common tactical picture.

▶ The target also shows up in the JFN database as a possible target requiring action. It happens that this company is not supported by organic fire support and must call for fire from another Service.

▶ The Fires and Effects Coordination Cell (FECC) supporting the IBCT identifies the target on the JFN.

▶ The JSF Headquarters Effects Cell is alerted to the new target and directs, via the AJC2 network, that a Navy destroyer provide fire support with a loitering brilliant antitank submunition-equipped Tactical Tomahawk missile.

▶ Meanwhile, the dynamic air space coordination software alerts the fire support controller that a flight of F-16s is operating in the vicinity of the IBCT company.

▶ The JSF Effects Cell alerts the aircraft through the AOC that the tomahawk missile is inbound.

▶ The fighters move out of the way during the strike, then provide BDA on the target and clean up any surviving tanks.

5.3   INFORMATION OPERATIONS

Information Operations involves actions taken to affect adversary information and information systems while defending one's own information and information systems. Both the JSF and adversary commanders depend on information to plan operations and employ their respective forces. The goal, then, is to ensure the JSF Commander has ready reliable access to his information, while at the same time, denying his adversary the ability to readily and reliably access adversary information. The JSF conducts Information Operations to achieve or support campaign or major operational objectives. Through integration into the full range of military operations (air, land, sea, space, and special), Information Operations degrades an adversary's capability to organize, command, deploy, and sustain military forces and capabilities. By doing so, Information Operations allows the JSF to

obtain and maintain the degree of information superiority required to quickly and decisively accomplish its mission.[47]

Information Operations can help deter adversaries from initiating actions detrimental to national interests. If carefully conceived, coordinated, and executed, Information Operations can make important contribution to defusing crises; reducing periods of confrontation; and enhancing the effect of informational, diplomatic, economic, and military efforts. Information Operations may also help forestall or eliminate the need to employ forces in a combat situation. Thus, Information Operations requires close coordination among the numerous government agencies.

The JSF Headquarters includes an I&O Cell that is responsible for planning and oversight of Information Operations as part of the effects coordination process. As an integral part of *effects planning,* the Information Operations Team coordinates, integrates, and deconflicts organic JSF assets with reachback resources to develop the Information Operations component of the effects concept and operations plan. The JSF, in conjunction with CINC staffs, plans early utilization of retaliatory or preemptive Information Operations to achieve desired effects with minimal physical force possible. The JSF must capitalize on the imbalances created by Information Operations. These assist in the achievement of "decision superiority"—where the better decision is arrived at faster than an opponent can react, or, in a non-combat situation, at a tempo that allows the force to shape the situation or react to changes and accomplish its mission.

Information Operations planning is accomplished in both the deliberate and crisis action planning processes at the JSF Headquarters and component level, and is incorporated in the JSF's overall operations planning. Information Operations may involve complex legal and policy issues requiring careful review and national-level coordination and approval. JSF planners should understand and work to resolve these potential limitations early in the planning process. Some Information Operations capabilities are only available through theater and national sources. The JSF Information Operations staff requests support from the appropriate controlling agencies. Reachback to planners and information operators at organizations such as Joint Information Operations Center, Joint Warfare Analysis Center, Defense Intelligence Agency, US Space Command, and National Security Agency enhance IO planning and execution.

The JSF is equipped and manned with the capability to employ both defense and offensive aspects of Information Operations. These aspects are addressed in greater detail in the following sections.

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[47]JCS. 1998. *Joint Publication 3-13: Joint Doctrine for Information Operations.* Washington, DC: US Government Printing Office.

5.3.1 OFFENSIVE INFORMATION OPERATIONS

The ultimate target for Offensive Information Operations is the human decision-making process. To successfully conduct Offensive Information Operations, the JSF must accomplish the following:

▶ understand the adversary's perspective and how it may be influenced;

▶ establish appropriate and lawful Information Operations objectives;

▶ identify targets that can help achieve Information Operations objectives;

▶ determine the most effective means to engage those targets and the means to assess the Information Operations effects;

▶ integrate, coordinate, and implement Information Operations and

▶ assess the outcome of the Information Operations

Offensive Information Operations applies perception management actions such as psychological operations (PSYOP), OPSEC, and military deception, and may apply attack options such as EW and physical attack/destruction to produce a synergistic effect against the elements of an adversary's information systems.

Psychological Operations. PSYOP are actions taken to convey selected information and indicators to foreign audiences. They are designed to influence emotions, motives, reasoning, and ultimately, the behavior of the adversary—*the JSF will use PSYOP to affect the adversary's reasoning*. Examples of PSYOP include distribution of leaflets, loudspeaker broadcasts, radio and television broadcasts, and other means of transmitting information that encourages adversary forces to defect, desert, flee, or surrender.

OPSEC. As in the case of Defensive IO, OPSEC denies the adversary critical information about friendly capabilities and intentions needed for effective and timely decision making, leaving the adversary vulnerable to other offensive capabilities.

Military Deception. Military deception targets adversary decision-makers through effects on their intelligence collection, analysis, and dissemination systems. Military deception is focused on desired behavior, not simply to mislead thinking. Forces and resources must be committed to the deception effort to make it believable, possibly to the short-term detriment of some aspects of the campaign or operation. OPSEC for military deception is absolutely critical.

Electronic Warfare. EW is any military action that involves the use of electromagnetic and directed energy to control the electromagnetic spectrum or to attack the adversary. The JSF should ensure maximum coordination among EW and other IO intelligence and communications support activities for maximum effect and to reduce electronic frat-

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ricide. This coordination is necessary to ensure effective exchange of information, eliminate undesirable duplication of effort, and provide mutual support.

Physical Attack. Physical attack refers to the use of "hard kill" weapons against designated information related targets as an element of an integrated IO effort.

Other activities that contribute to offensive IO include Public Affairs (PA) and Civil Affairs (CA). The I&O Cell in the Fixed Headquarters will primarily be responsible for coordination of these activities.

> **Public Affairs.** PA activities expedite the flow of accurate and timely information to the internal audience (the JSF organization) and the external audience (the public). Increasing availability of this information to these audiences may have a significant effect on national will, political direction, and national security objectives and policy. PA activities will not be used in support of military deception capability or to provide disinformation to either audience.

> **Civil Affairs.** CA activities support the CINC's and JSF Commander's initiatives to improve relations with friendly foreign military forces and civilian populations. Furthermore, CA activities will contribute to achieving regional strategy and long-term goals. These are done by strengthening the capabilities of a host nation in effectively applying its indigenous resources in foreign operational areas. PSYOP and PA can maximize these efforts through information products and programs.

5.3.2 DEFENSIVE INFORMATION OPERATIONS

Defensive Information Operations integrate and coordinate policies and procedures, operations, personnel, and technology to protect and defend information and information systems. Defensive Information Operations are conducted through information assurance (IA), operations security (OPSEC), physical security, counter-deception, counter-propaganda, counter-intelligence, and electronic warfare (EW). These are discussed in further detail in the following paragraphs.

Information Assurance (IA). IA protects and defends information and information systems by ensuring their availability (assured access by authorized users), integrity (protection from unauthorized change), authentication (verification of originator), confidentiality (protection from unauthorized disclosure), and non-repudiation (undeniable proof of participation). The JSF assures its information through employment of technologies and processes such as multilevel security, access controls, secure network servers, and intrusion detection software. The JSF will rapidly detect adversary attempts to attack its information systems, and differentiate between the effects of adversary action and other phenomena such as weather effects, normal system outages, and operator error. This is essential to ensure effective capability restoration and attack response.

Operations Security (OPSEC). The JSF will identify critical information and analyze friendly actions associated with military operations and other activities, the purpose of which is to identify those actions that can be observed by adversary intelligence systems. The JSF must determine indicators that adversary intelligence systems might obtain which could be interpreted or pieced together to derive critical information in time to be useful, and select and execute measures that eliminate or reduce to an acceptable level the vulnerabilities of friendly actions to adversary exploitation.

Physical Security. Magnetic emanations, electrical impulses, disgruntled workers, earthquakes, and other natural phenomena are examples of possible threats to the JSF's information systems. The JSF must analyze potential threats and assess the best means to physically protect its information systems

Counter-deception. JSF planners will plan counter-deception actions, as required, to counter any foreign deception operation. This may be conducted through negation, neutralization, or diminishing the effects of, or gaining advantage from, the adversary deception operation. JSF planners should also consider activities contributing to awareness of adversary posture and intent to identify adversary attempts to deceive friendly forces.

Counter-Propaganda. By identifying adversary propaganda, JSF planners contribute to situational awareness and serve to expose adversary attempts to influence friendly populations and military forces.

Counter-Intelligence. Counter-intelligence activities provide information to the JSF, and protect and defend friendly information and information systems against espionage, sabotage, or terrorist activities.

Electronic Warfare. JSF planners must consider EW in order to protect and defend JSF access to the electromagnetic spectrum, which is required for information flow and information systems. Actions JSF planners may consider to protect JSF information systems include changing call signs, words, and/or frequencies as required; frequency management; and counters to attacks against force radio frequency, electro-optical, and infrared systems.

5.3.3 SUMMARY

Situational awareness and the ability to command and control his forces is absolutely critical to the JSF Commander. He and his staff must understand the potential threats that may prevent him from understanding the battlespace, and directing and redirecting his forces as appropriate. The JSF must integrate many different capabilities and activities to achieve a coherent IO strategy in order to counter these threats, and seize the advantage. The preparation of those personnel and organizations responsible for planning and conducting IO is achieved through extensive training, exercise, and modeling and simulation programs that mirror the manner in which the JSF will employ military force.

5.4 NON-LETHAL SYSTEMS

The future battlespace is not so much ruled by doctrine as by the whims of a greater variety of unconventional or unpredictable adversaries. It is the Commander's challenge to quickly respond to the full range of possibilities within the spectrum of conflict—from the conventional major theatre of war to the unconventional, asymmetric application of force. Increasingly, the adversary can be expected to apply methods that run counter to conventional doctrine and may even violate the laws of war (employing weapons of mass destruction and/or effects). Adding to the challenge of conducting military operations in the future are increasingly complex environments (e.g., urban areas), humanitarian concerns, the ever-present media looking for "news" (e.g., the CNN Effect).

To adequately address the increasing battlespace possibilities, the future commander requires a larger choice in the types of force he can apply—both lethal and non-lethal. With non-lethal weapons in his arsenal, the commander is given a greater ability to perform the following:

▶ Enhance the management of escalation of a situation, with more increments and options and without unnecessary damage to infrastructure;

▶ Reduce unintended consequences, minimizing non-combatant casualties and collateral damage.

▶ Affect public perceptions and sympathies toward the conflict.

Non-lethal force is designed to achieve the commander's desired effects while minimizing fatalities, permanent injury to personnel, and undesired damage to property and the environment. Non-lethal means are categorized as either "counter-personnel" or "counter-materiel."

▶ Counter-personnel capabilities can be used to control crowds, incapacitate individuals (without unduly harming them), deny access (or exit), and clear facilities/structures. Counter-personnel actions in which non-lethal force can be effectively (and optimally) applied include urban combat operations, peace operations (when law enforcement rather than armed conflict is the nature of the presence), and crowd control situations in which combatants are intermingled with non-combatants and there is insufficient intelligence to distinguish between the two or when there is great risk of harming innocent bystanders.

▶ Counter-materiel capabilities can be used to deny access to or retreat from designated land, sea, or air space (or a combination). They can also be used to disable or neutralize equipment or facilities. Counter-materiel capabilities intended to control space or movement without permanent destruction are preferable in situations where infrastructure is needed post conflict, or when operations require temporary effects only. In a situation such as Kosovo, ren-

dering bridges temporarily unusable to adversaries but subsequently operational for refugee and relief personnel travel would have been the preferred alternative to the lethal means applied and the resulting widespread destruction to necessary civilian infrastructure.

Non-lethal capabilities are not just tactical in scope but can also operate for effects at the operational and strategic levels. For instance, in democratic societies, the ability to influence public opinion becomes a strategic and/or political weapon that adversaries can use to their advantage. Video and photographs of death, injury, and destruction can galvanize a society to take action it might not otherwise and against the urgings of its leaders. The use of non-lethal systems can prevent such counterproductive results.

At the operational level, there are major applications not only for force protection but also for movement and maneuver and for employing forces and fires. Some non-lethal capabilities are already in the inventory; many more wait to be developed and fielded. They extend the commander's span of control and provide a greater ability to contain a situation before it escalates, or return it quickly to a manageable environment post-conflict. Technologies that offer these capabilities are as low-tech as rubber bullets and tear gas (and already in the inventory), or as high-tech as high-energy lasers and directed energy weapons, and which can be delivered by manned, unmanned aerial systems, or unmanned ground vehicles ("robots"). There are robotic systems in development that are large in scope and can be used for patrolling and potentially for combat operations; other robotic systems are available or in development that are very small and covert, and which are particularly useful in surveillance and special operations.

5.5   COUNTER AIR OPERATIONS

Air superiority is achieved through the counter-air mission. The JSF Commander will integrate the capabilities of each Service to conduct offensive and defensive air operations. Counter air operations will begin early in the employment of the JSF, and their effects will produce a desired degree of air superiority at the time and place of the JSF Commander's choosing. Air superiority may not totally eliminate air and missile opposition. However, it limits the adversary's ability to conduct air and missile attacks while providing a favorable environment for the JSF to perform its tasks without prohibitive interference form adversary attacks. Air superiority may vary over time and geography. The degree of air superiority required depends on the overall situation, the effects desired, and the JSF concept of operations.[48]

JSF employment is based on the assumption that its likely adversary will not possess a significant air-based threat. Any air threat that does exist will be suppressed through offensive and defensive counter-air missions conducted by strike and interceptor aircraft respectively. As part of the effects planning process, the optimal combination of strike

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[48] JCS. 1999. *Joint Publication 3-01: Joint Doctrine for Countering Air and Missile Threats.* Page v.

against airfields, C2 centers, and air defense artillery sites is determined. Joint Suppression of Enemy Air Defenses (JSEAD) is conducted as necessary to achieve local air superiority for both strike missions and force insertion.

5.5.1 AIR AND MISSILE DEFENSE

5.5.1.1 Offensive and Defensive Counter-air

The JSF will employ offensive and defensive counter-air in accordance with joint doctrine.[49] Tactics, techniques, and procedures (TTPs) will have to be worked out through experimentation and exercises to fully detail command and control, air space control measures, and planning interaction between the JSF Headquarters, warfighting components and individual weapons systems.

Due to its size and the assets required to deploy it quickly, the PATRIOT air defense missile system is not envisioned as being part of the JSF concept unless it is already in the JOA due to force deployment options. Therefore, surface-based counter-air defense capability will reside in the deployed naval force utilizing the AEGIS weapons system. It is expected, however, that the rapidly deployed ground forces will include point air defense systems for defense against low flying rotary and fixed-wing aircraft. A potential capability for local active defense is achievable utilizing Advanced Medium-Range Air-to-Air Missile (AAMRAM) missiles mounted on a small vehicle such as a light armored vehicle (LAV) or HMMWV.

5.5.1.2 Theater Ballistic Missile Defense

Defense against theater ballistic missiles (TBMs) can occur throughout the employment cycle of the missile system, ranging from destroying missiles in the manufacturing process to engaging them in flight. Attack operations are employed against adversary TBM systems before and after launch. In the timeframe of the JSF, engagement of TBMs in flight will fall to surface air defense missile systems such as AEGIS, PATRIOT, and THADD.

However, the size and weight of land based missile defense systems such as PATRIOT and THAAD dictate that sea-based systems initially provide theater ballistic missile defense (TBMD). In the timeframe of initial JSF development, this defense is limited to the littoral regions and provided by the Navy Area Defense system in AEGIS cruisers and destroyers. This system provides robust coverage against TBM and other missile threats for sea points of debarkation and operations near the coast. Nearer the 2010 timeframe, Navy Theater Wide systems will become available in the same classes of ships and will provide a wider area of coverage. This is coverage becomes significant against longer range threats to ISBs and FOLs.

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[49] JCS. 1999. *Joint Publication 3-01: Joint Doctrine for Countering Air and Missile Threats*, Page v.

If its development continues on schedule, a defense against ballistic missiles in the boost phase of flight is possible using Airborne Laser (ABL) aircraft. However, without ABL, TMD away from the littorals will be unavailable without the deployment of PA-TRIOT or THAAD missile systems, both large consumers of strategic airlift.

Attack operations against the adversary TBM infrastructure will be necessary if TBMs are deemed a threat to the JSF, supporting ISBs, FOLs, and allies. Additionally, the JSF and supporting facilities must be capable of taking passive defense measures against the TBM threat such as dispersion, masking vulnerabilities, and chemical/biological defense measures.

5.5.2 AIR DEFENSE COMMAND AND CONTROL

The JSF Commander is the supported commander for counter-air. As such, the JSF Headquarters will plan, organize, and execute counter-air operations. He exercises operational control over assigned or attached forces to ensure unity of effort to counter-air and missile threats. The JSF Headquarters staff assists the JSF in the decision making and execution process. The planning functions and responsibilities normally associated with the JFACC, AADC, and ACA will fall under the JSF Headquarters, with execution tasks assigned to the Service component most capable of providing appropriate C4I for the counter-air mission. This means that the JSF Headquarters will plan and coordinate the ATO while a Major Command, such as the AEF, provides the air operations center and conducts air space control.

The C4I system employed by the JSF should consist of interoperable systems that provide complete coverage against a diverse threat array. The Single Integrated Air Picture, provided through use of TADIL J based Joint Data Network (JDN) and Cooperative Engagement Capability (CEC), is an enabler for air defense command and control. This near real-time picture of the air space allows rapid reaction to air threats and ties air defense units into a common picture of the battlespace. Units capable of rapid deployment that can contribute to air defense command and control include naval air defense ships, E-3 Sentry, E-2 Hawkeye, and ABCCC.[50]

5.5.3 JOINT SUPPRESSION OF ENEMY AIR DEFENSE

The JSF conducts JSEAD in accordance with Joint Publication 3.01-4, *JTTP for Joint Suppression of Enemy Air Defenses*, as required to achieve and maintain air superiority. There are two departures from this doctrine: 1.) in the absence of a JFACC, the JSF Headquarters is responsible for coordinating JSF JSEAD requirements as part of the effects planning process and 2.) whenever possible, the use of unmanned combat air vehicles will be used. To facilitate maneuver and delivery of air resupply, in addition to traditional strike support, it may be necessary for the JSF to plan for JSEAD in support of

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[50]JCS. 1999. Joint Pub 3-01: *Joint Doctrine for Countering Air and Missile Threats*. Washington, DC: JCS.

these missions. Outfitting the JSF should take into consideration the increase in equipment for conducting JSEAD on a much larger scale than normal. Jammer configured unmanned vehicles and self-contained homing missiles provide a force multiplier that will reduce the threat against manned JSEAD aircraft and free those assets for other missions.

The JSF Commander will establish the requirements for JSEAD to facilitate the joint operation. The JSF Headquarters Execution Cell staff is responsible for coordinating and planning JSEAD support, monitoring execution, coordinating and de-conflicting JSEAD operations as directed by the JSF Commander, and evaluating JSEAD impact on both friendly and adversary activities.[51]

JSEAD may be coordinated and planned for by the JSF I&O Cell. Based on the missions, the Subordinate Task Forces determine SEAD requirements, plan and coordinate JSEAD in support of their operations, and may be designated as a supported commander in a particular operation. Based on JSF Commander guidance, the component units are responsible for detailed mission planning and execution of JSEAD operations.[52]

5.6   UNMANNED SYSTEMS

The JSF will use unmanned ground, sea, cyber, and air systems in the conduct of its operations. The ability of unmanned systems to operate in all dimensions of the battlespace, be it ground, sea, air or space, is a dominant force multiplier. Near-term technology available for the JSF will provide users with unmanned systems that will have teleoperated, semiautonomous, and limited autonomous capabilities. The table below gives many of the applications involving unmanned systems. These systems will function as part of a multi-mission combined arms team and will be teamed with, and under control of, humans and their manned systems (Table 3).

Table 3.   Applications of Unmanned Systems in the JSF

Unmanned Land Vehicles	Unmanned Air Vehicles	Unmanned Weapons
RSTA Scouts Logistics Vehicles Decoy vehicles Lethal/armed robots Urban small/micro robotic applications Communications relay	RSTA platforms Weaponized Logistics vehicles Micro air vehicles Communications relay	Rockets Direct and Indirect fire Mines
Unmanned Sea Vehicles	**Unattended Ground Sensors**	
Mine detection and clearance Mine avoidance	Projectable Netted Multi-spectral	—

[51] JCS. Joint Pub 3-01.4: *JTTP for Joint Suppression of Enemy Air Defenses*. Page vii.

[52] JCS. Joint Pub 3-01.4: *JTTP for Joint Suppression of Enemy Air Defenses*. Page vii.

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Unmanned systems will be utilized in combat, combat support, and combat service support roles, and in all theater environments, augmenting and, in some instances, replacing human intervention. Unmanned air and ground systems, both mobile and stationary, will work together to function as part of sensor and fires grids in a networked RSTA system. Figure 14 graphically depicts the contribution of unmanned systems to JSF employment.
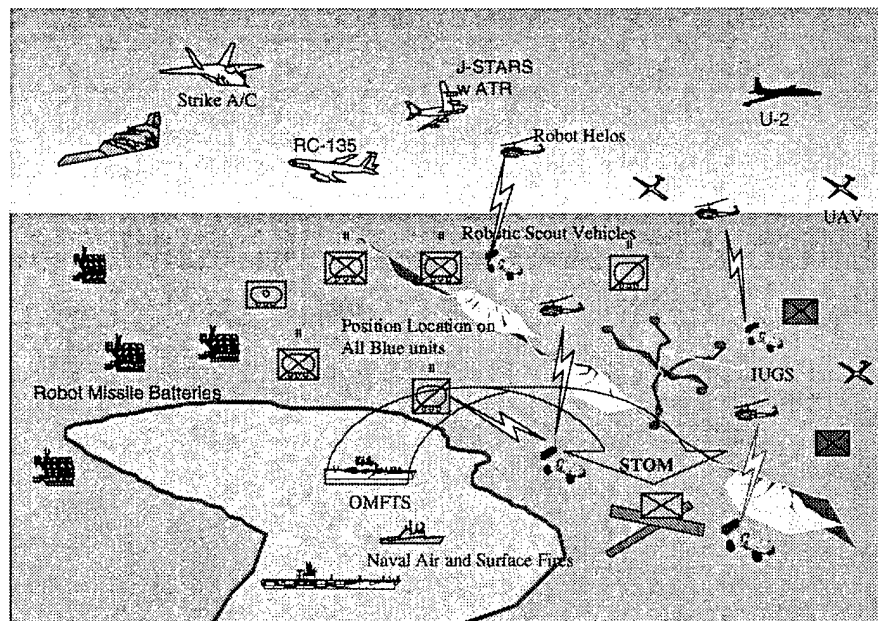
Figure 14.   Manned and Unmanned Systems Within the JSF

The utility of unmanned systems revolves around their ability to perform the following:

► Acquire information and employ intelligent decision making.

► Identifying hazardous areas such as NBC (nuclear, biological, chemical) contamination and minefields.

► Conduct reconnaissance, surveillance, and attack at tactical, theater, and strategic levels.

► Enhance security of forward deployed forces as well as rear echelon support bases.

► Maneuver on land, sea, air and space.

► Enable commanders to rapidly focus combat power with reduced risk to soldiers.

▶ Reduce logistics requirements (e.g., reduced CSAR, water, food, etc.)

Unmanned systems and intelligent agents will bring a variety of capabilities to the JSF that enhance the dynamic processes that enable full dimensional operations on the ground, at sea, in the air, or space. The general patterns of operations consistent with effects-based operations include the following concepts:

▶ **Force Projection.** Unmanned systems, through rapid deployment with C2 assets, will directly impact force projection in early entry operations by increasing the real-time information collection available to commanders and by providing commanders with a way of putting weapons on targets early in the campaign. Unmanned systems will reduce the overall footprint of the JSF, thus improving strategic mobility while maintaining or increasing force effectiveness. Pre-deployment of unmanned RSTA systems into the JOA prior to introduction of other JSF forces can provide an early picture of the battlespace without the force protection issues associated with manned systems.

▶ **Force Protection.** Near-term capability in unmanned systems will provide the JSF with enhanced capabilities in RSTA, NBC detection, mine clearance, and security. Furthermore, unmanned systems can conduct operations without exposing as many US personnel to risk. Systems will be cheaper, smaller, faster, and, in some cases, considered expendable. Unmanned systems also provide both active and passive capabilities to protect the force through aerial reconnaissance, surveillance, intelligence collection and target acquisition, security operations, remote sensors, suppression of adversary air defenses, mine clearance, obstacle removal, smart minefields, and other passive and active protection systems.

▶ **Information Superiority.** Unmanned systems will carry payloads enabling them to provide strategic, theater and tactical reconnaissance that will allow the JSF Commander to gain real-time information about the adversary. These systems, with their on-board automated sensors and their intelligent agents, will provide tactical battlespace information that augments the information gathered from the national-level imagery and signals intelligence systems. Integration with the sensor grid will provide a contribution to the Common Tactical Picture and the Joint CROP.

▶ **Decisive Operations.** The rapid deployability of unmanned systems makes them outstanding candidates for early strike assets within the JSF. Unmanned rocket launchers, armed UAVs, smart minefields, and direct and indirect fire weapons will operate throughout the depth, width, and breadth of the battlespace. These remotely operated systems will provide both the real-time intelligence necessary for the JSF Commander to locate and identify key targets as well as the means to destroy them, and at the same time providing stand-off protection of operators and a smaller footprint in the JOA.

▶ **Sustainment.** Short-term technologies available to the JSF will provide leader-follower capabilities that will allow soldier-operated systems to lead multiple unmanned systems on paved and improved roads. Aerial resupply and medical evacuation are other potential capabilities that will reduce force vulnerability.

Chapter 6. Logistics

Deployment[53] and sustainment operations in support of the JSF will be centered on implementing the *Joint Vision 2010* and *Joint Vision 2020* concept of Focused Logistics, which is "the ability to provide the joint force the right personnel, equipment, and supplies in the right place, at the right time, and in the right quantity."[54] This chapter discusses the JSF concepts of deployment, sustainment, and logistics management. The concepts and ideas contained herein can become a reality in the near- and far-term as supporting concepts and enablers continue to be developed and fielded by the Services, the CINCs, and DoD agencies. These enablers include lighter combat forces that generate fewer deployment and sustainment requirements; Web-based logistics information management systems that operate in real-time; asset visibility; enhanced pre-positioning programs that support both rapid deployment of forces and initial sustainment requirements; precision munitions and stand-off fire support capabilities that reduce the overall munitions requirements and the tactical logistics requirements in the operations area; enhanced materiel handling capabilities; enhanced air, ground, and sea distribution and transportation systems; and enhanced medical support and evacuation capabilities.

6.1   THE LOGISTICAL ENVIRONMENT

The logistical environment of JSF has been focused on two concepts:

▶ Focused Logistics. "...the ability to provide the joint force the right personnel, equipment, and supplies in the right place, at the right time, and in the right quantity, across the full range of military operations."[55]

▶ Opergistics: the integration and synchronization of what has been historically categorized separately under operations and logistics.

Focused Logistics

The Focused Logistics concept will become a reality in the near term as real-time, Web-based information management systems are fielded in the operating forces. These

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[53] While USAF supports the notion of rapid deployment, it is concerned with the lift implications of the JSF concept, noting that the concept does not seem to consider the lift requirements for sustaining forces in theater. The USAF also believes that the JSF Concept needs to better articulate the "...command and control, force protection and engineering requirements for operations into expeditionary APODs."

[54] CJCS. 2000. *Joint Vision 2000*. Washington, DC: US Government Printing Office. Page 24.

[55] CJCS. 2000. *Joint Vision 2000*. Washington, DC: US Government Printing Office. Page 24.

systems will provide future Joint Force Commanders with a CROP that integrates and synchronizes the functions of operations and logistics. Inputs into this picture will include the following:

- ▶ in-transit visibility of units, equipment, and components in the transportation and distribution pipeline;

- ▶ real-time visibility of unit and equipment readiness; and

- ▶ real-time visibility of logistics capabilities available in the theater and JOA.

Traditionally, massive logistics footprints have constrained the commander's tactical and operational reach. In the future, information technology will minimize this footprint and will also provide unprecedented capabilities in decision support and planning tools, enabling the integration of logistics factors in all operational decisions.

Opergistics

The capabilities that enable Focused Logistics will also support the operational concept of *Opergistics*. The JSF will treat operations and logistics as an integrated whole during planning, deployment, execution and redeployment. This includes the integration and synchronization of all warfighting resources available, including CONUS-based, theater-based, forward-deployed, and pre-positioned warfighting assets. Opergistics supports a more fluid projection of combat power by deploying mission-tailored weapons and sustainment packages that are ready to fight as soon as they enter the joint operations area. Depending on the situation, this could mean conducting forced entry operations and deploying ground force maneuver elements either directly to an objective area or to an area that supports a more advantageous maneuver to the objective.

Opergistics enables force agility by eliminating or reducing the deployment and sustainment support footprint in the JSF operations area. Combat forces and sustainment support will be generated from aerial and sea ports in CONUS, and in-theater ISBs, FOBs, and sea-based platforms. Administrative and sequentially conducted reception and staging operations will be conducted at aerial and seaports located in benign, third country areas. This force agility will support the strategic, operational, and tactical maneuver that the JSF Commander needs to successfully conduct rapid decisive operations.

6.2   DEPLOYMENT AND SUSTAINMENT OPERATIONS

6.2.1   CONCEPT OF DEPLOYMENT

Today's Deployment Issues

Current plans for military operations against a hostile adversary call for airborne and amphibious forces to conduct forced-entry operations to secure airfield, beach, and port facilities that can support the deployment of heavy mechanized and armored follow-on

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forces. Generating adequate combat power to conduct sustained operations takes considerable time and tedious coordination: the deployment is supported through a combination of military and commercial airlift and sealift, and Service pre-positioning programs.

Adding to this build-up time is the RSOI process that follow-on forces must complete before they are ready for combat. The process of integrating personnel transported by airlift and combat equipment transported by sealift must be conducted in an administrative and sequential manner—thus leaving US forces very vulnerable to anti-access threats during the initial phases of an operation.

Heavy follow-on forces also generate an overwhelming and immediate requirement for fuel, ordnance, maintenance, transportation, and engineering support to sustain operations. The same air and sealift assets, and port terminals that support deployment operations must also support the throughput of materiel to fill logistics requirements for the duration of the operation. These transportation and support terminals are absolutely critical to the success of an operation and in many instances could be considered the center of gravity for US forces. For the Joint Force Commander, this means making an extraordinary investment in combat resources to protect and preserve essential support facilities.

> *The JSF will break these (and other) planning paradigms by employing rapidly responsive force packages ready to conduct sustained combat operations anywhere in the world.*

Integrated Force Packages Ready for Combat

The administrative and sequential RSOI and tactical assembly processes associated with today's planning will be conducted out of the operations area at air terminals in CONUS, at ISBs, FOLs, and FSBs in theater, or on Navy and pre-positioning support ships at sea. JSF components will be force packages of integrated combat, combat support, and sustainment capabilities that are delivered directly to the operations area and ready to conduct close combat operations on arrival.

Figure 15 and Figure 16 on the next page depict an example scenario of the concept, with the first figure representing the plan, and the second figure a geographical realization.

Amphibious Combat Power

Naval expeditionary forces will conduct Operational Maneuver From the Sea (OMFTS) by conducting strike and amphibious ground force operations from over-the-horizon sea-based platforms to deep inland and coastal objective areas. Marine amphibious forces will conduct Ship to Objective Maneuver (STOM) operations by deploying directly to objective areas from over the horizon amphibious shipping. Unlike today's limitations of amphibious operations, these forces will no longer have a requirement for an operational pause to build combat power at beach or port support areas ashore before

conducting offensive operations. Amphibious combat power will be generated and sustained from sea-based platforms with Marine elements maneuvering to objective areas after quickly passing through landing support areas or penetration points along a coastline.
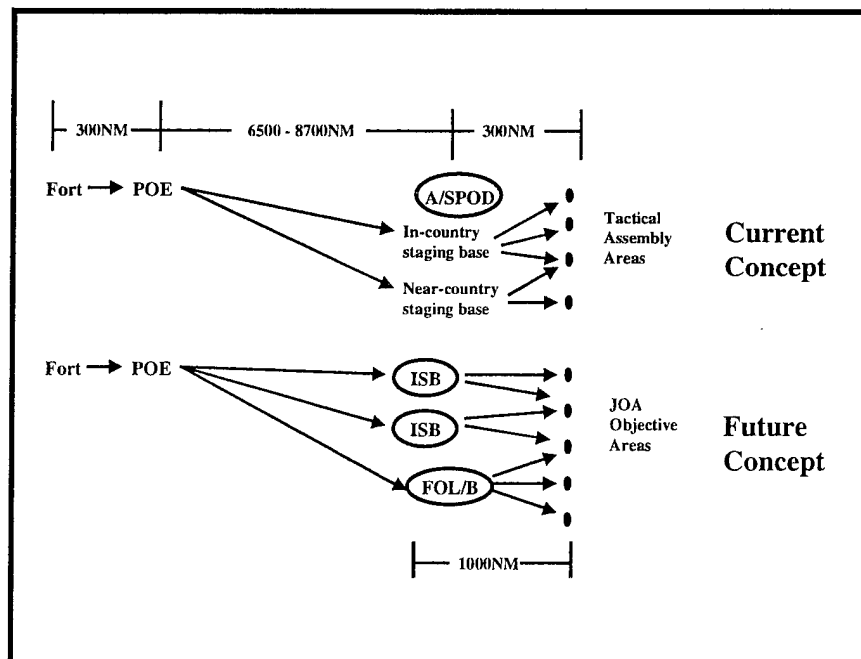
Figure 15.   Deployment and Sustainment Support — Current vs. Future Concept
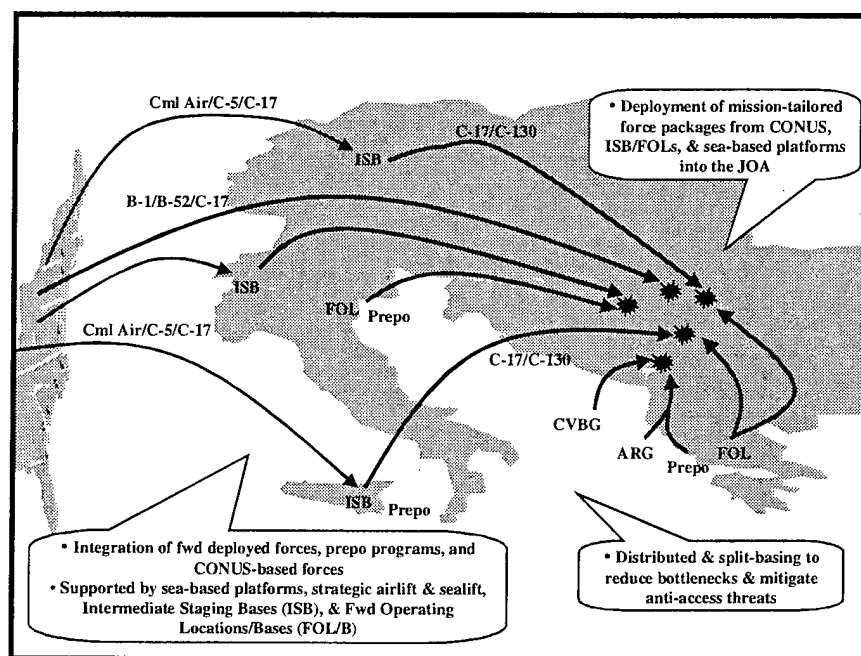
Figure 16.   Geographical Realization of the Concept of Deployment

Airlifts

The Army ground maneuver elements will deploy directly to the battlespace using drop zones and landing zones as entry points for airborne and air assault operations or into austere, temporary airfields for airland operations in support of light mechanized units. These elements will originate from CONUS bases and will be strategically deployed via C-17 airlift directly to drop zones and airfields. Or they will be echeloned forward to ISBs via military and commercial strategic airlift and pre-positioning program sealift for onward movement via C-17 and C-130 aircraft to drop zones or to Advanced Tactical Support Bases (ATSB). ATSBs are austere and temporary expeditionary landing zones and airfields that are quickly established in the joint operations area to support ground maneuver to objective areas.

C-130 Cargo Fleet

The majority of equipment employed by Army ground forces will be constrained in size and weight to meet the capacity limitations of the C-130 aircraft. This limitation will be similar to current equipment constraints for airborne and air assault forces, and would parallel the organizational plan for the recent Interim Brigade Combat Team Initiative. The goal is to leverage the massive capabilities of the US commercial fleet of aircraft and the C-130 cargo fleet.

Continuing to develop programs such as the Civil Reserve Air Fleet and TRANSCOM's recent Virtual Airlines Initiative will provide a great capacity to move personnel and equipment from CONUS bases to theater ISBs. From the ISBs, C-130s and C-17s provide a unique intra-theater capability to move forces into expeditionary airfields. Both the C-130 and C-17 can land and take-off on temporary, austere airfields that are no more than 3,000 feet long and 60 to 90 feet wide.

Multiple Force Entry Points

Using the C-130 and C-17 to deploy forces to the battlespace also provides an operational synergy that has never been fully realized by a Joint Force Commander. The JSF will have multiple force entry points throughout the battlespace and will not be constrained by the limited availability of improved airfields and ports. This enhances surprise and security by allowing the JSF to arrive on the ground anywhere in the battlespace. It also creates a critical dilemma for the adversary who can either be thinly dispersed trying to deny access everywhere or he can stay massed at key nodes leaving entry points open. Additionally, the JSF will generate a windfall in combat power by eliminating the requirement to permanently secure fixed airfields and ports.

However, this concept also creates a requirement for rapidly establishing austere airfields from roads, highways, or unimproved ground in the operations area. The JSF will require joint expeditionary airfield organizations that include capabilities such as airfield survey teams, aircraft control and terminal operations units, deployable engineer equip-

ment for obstacle removal and ground stabilization, material and container handling units, and airfield security units.

FOL/B Operations

Air forces will also integrate and synchronize strategic, operational, and tactical maneuver capabilities. Long-range strategic bombers will operate from CONUS bases in conjunction with short- and medium-range strike aircraft operating from theater FSLs and FOLs/Bs) and sea-based platforms. FOLs will maximize the advantages of reachback and distributed operations that have recently been realized by Aerospace Expeditionary Forces. Navy and Marine aircraft, designed to operate in harsh environments, can achieve increased sortie rates by operating from austere FOL/Bs ashore. The addition of expeditionary airfield equipment sets to each Maritime Pre-positioning Squadron will provide near-term enhancements to FOL/B operations.

Advantages and Disadvantages of JSF Concept of Deployment

This concept of deployment gives the JSF Commander great advantages over current and other near-term deployment concepts.

► Crisis response time is greatly enhanced by leveraging all lift assets available to support a US military operation. This includes strategic and intra-theater airlift and sealift from both commercial and military resources.

► This concept minimizes the logistics footprint in the theater and the JOA by keeping the majority of support functions and processes outside of the operations area at CONUS and theater support bases, or sea-based platforms.

► Keeping ground force maneuver elements relatively light maximizes combat agility and empowers the JSF Commander with unprecedented levels of strategic, operational, and tactical maneuver capabilities.

► Reducing or eliminating deployment support functions conducted in the operations area provides much greater security and force protection against increasingly lethal anti-access threats that adversaries will employ in the future. Keeping commercial and military strategic air and sealift assets out of the operations area also reduces the threat against critical deployment support resources.

These advantages are great but are gained by accepting more risk from anti-air threats than is usually accepted in today's warfighting environment. The proliferation of increasingly lethal mobile surface-to-air missiles (SAMs) and man-portable air defense missiles (MANPADs) will make a JSF deployment much more risky for both fixed-wing and rotary-wing aircraft than the sequential build-up of forces and linear battlespace movement envisioned in current operations plans. However, there are powerful capabilities that exist or are under development that can mitigate this anti-access risk. These include spoofing

drones and flares for transport aircraft, IR jamming pods for individual aircraft, anti-missile laser pods, and lightweight armor for critical aircraft components. To further reduce this risk, JSF elements deploy to the battlespace in integrated combat packages that include ground and air ISR assets covering air corridors and entry points, air-to-air and ground-strike fixed-wing aircraft, and rotary wing assault aircraft for close-in escort.

The biggest constraints of supporting a rapid deployment to theater and the JOA could be overcome by systems that are currently in the design stages; for example:

▶ A heavy airlifter. Future concepts for airlift platforms that are part dirigible and part fixed-wing aircraft will provide tremendous cargo and equipment strategic transportation capabilities. Capacities have ranged from 1 million- to 2-million pound cargo, depending on the model of aircraft. Heavy airlifters also have a capability to conduct vertical take-offs and landings, greatly reducing the support infrastructure requirements (fixed or improved runways, terminal guidance, fuel support, etc.) generated by current strategic airlift operations.

▶ The Shallow-draft High Speed Sealift (SHSS), capable of traveling at more than 55 knots. SHSS squadrons could be based at CONUS embarkation points with pre-positioned equipment onboard. On-call alert units would be quickly loaded and transit to the operations area at first indications of a crisis. Shallow-draft ships could bypass deep draft ports and reduce the requirement for a Joint Logistics Over The Shore complex that requires a protracted build-up period. On arrival to the JOA, these squadrons could be operationally and tactically integrated with Marine units embarked aboard forward-deployed amphibious shipping.

▶ A future heavy-lift tiltrotor aircraft with a 20-ton capacity. This aircraft could help fill the operational and tactical mobility gaps that exist in today's force structure by providing a capability to transport armored combat vehicles into the battlespace without the requirement for airfields. This would increase both flexibility and force protection by greatly expanding potential air corridors and entry points available for the insertion of decisive ground forces.

6.2.1.1 JSF Deployment and Global Reach Laydown

The composition and size of the JSF will always be influenced by factors such as situation, mission, and adversary, but it is also heavily dependent on the time available for positioning forces and logistics preparation of the theater prior to mission execution. Quickly establishing a *global reach laydown capability* (i.e., enabling the strategic deployment of air assets through the positioning of support equipment and personnel) is critical for meeting the rapid deployment criteria for JSF operations. The warning or alert order should provide the JSF Commander the authority to position forward deployed forces, strategic and intra-theater airlift, and afloat pre-positioned assets within the theater

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closer to the objective area. This authority should also include deploying CONUS-based forces to ISBs and FOLs to establish the global reach laydown capability to increase the capacities and capabilities at theater A/SPODs to receive follow-on forces.

Establishing this laydown capability could be further enhanced by pre-positioning support equipment at "warm" bases where US forces operate on a continual basis, and "cold" bases where host nation agreements have been established to allow US forces to use the facilities to support contingency operations. Pre-positioned equipment would be used to rapidly expand airfield maximum on ground (MOG) capacities as well as port berthing and staging capacities. These capabilities would include equipment such as fuel support assets, expeditionary airfield matting, transportation assets, material and container handling equipment, and expeditionary structures that can quickly provide aircraft hangers, maintenance facilities, storage warehouses, billeting, and organizational work spaces. As this equipment requires a much lower investment than combat equipment, spreading port opening sets among multiple friendly countries within the theater can also mitigate host nation anti-access vulnerabilities.

6.2.1.2 Deployable Forces

The JSF concept will take full advantage of all forward deployed forces available in the theater of operations. Although support for foreign-based ground and air forces has declined in recent years, forward deployed naval forces and special operations forces will continue to provide robust combat capabilities far into the future. These forces include forward deployed units (e.g., Army units, Air Force units, SOF), Navy Carrier Battle Groups (CVBGs), and Amphibious Ready Groups (ARG) with embarked MEUs and SOF teams. Forward deployed Combat Logistics Forces (CLF) would provide a sea-based underway replenishment capability that supports these forces during sustained operations.

6.2.1.3 Afloat Pre-positioning Programs

Although there are currently land-based pre-positioned programs located in various CINC theaters, the JSF concept will focus on integrating afloat pre-positioning programs. Currently, each Service and the DLA have afloat "prepo" programs that include brigade sets of equipment for the Army and Marine Corps, and stocks of ordnance and fuel for the Air Force, Navy, and DLA. Land-based prepo is vulnerable to diplomatic and political tensions, with the host nation controlling the access to prepo and influencing the use of US military power. Focusing on sea-based programs provides great situational flexibility and takes advantage of current Service initiatives to enhance these programs in the near future. Forward deployed, afloat pre-positioning platforms offer a powerful capability to rapidly deploy combat power and sustainment support for all JSF components.

It is feasible in the near-term, to enhance or reconfigure existing Service programs to better support the JSF concept. The Marine Corps is currently expanding the capabilities of each of its Maritime Pre-positioning Squadrons to include an expeditionary, shore-

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based Fleet Hospital, a Naval Construction Battalion unit set, and an equipment set to establish and support a fixed-wing capable expeditionary airfield. Other pre-positioning initiatives that would enhance responsiveness include combat loading JSF-designated equipment, increasing selective off-load capabilities, adding rotary-wing deck spots and equipment access to these spots, and increasing landing craft capabilities to support off-loads at austere port or beach facilities.

6.2.1.4 *Intermediate Staging Bases and Forward Operating Locations/Bases*

ISBs and FOL/Bs located in the theater of operations will support the deployment and sustainment of the JSF. ISBs will operate as staging and support bases between CONUS and the joint operations area. ISBs will be located in allied or friendly countries, within 1,000 nautical miles of the operations area, but outside of the adversary's conventional weapons range. This range will allow the JSF Commander to leverage the intra-theater non-refueled ranges of C-130s and C-17s to deliver special operations forces and ground forces to JOA entry points. These intra-theater capabilities will also extend the range of assault and transport helicopters and vertical/short takeoff and landing aircraft (V/STOL) aircraft by supporting the capability to establish Forward Arming and Refueling Points in the battlespace for ground and air assault maneuver elements.

ISBs and FOL/Bs will be fixed air and seaport terminals with capacities that can be quickly expanded to handle the increased requirements that a JSF deployment will generate. Where possible, these sites will be transportation complexes with air and seaports co-located (within 100 miles or less) that will support the quick integration of personnel who deploy by airlift and equipment that deploys by sealift. Today's *ad hoc* nature of developing airfields and ports does not meet the response criteria or allow for synchronized deployment command and control required by the JSF. This rapid deployment will require mission-tailored joint airfield and port operations organizations that include Tanker Airlift Control Elements; airfield and port survey teams; transportation and material/container handling organizations; and traffic and distribution management organizations. Rapidly forming this air and sea bridge will be critical to the JSF concept and will take advantage of both military and civilian resources. Terminal operations and traffic management units from all services will be combined to form rapid response ISB contingency support packages. These units will include Military Traffic Management Command's (MTMC) Contingency Response Teams, Tanker Airlift Control Elements, Arrival/Departure Airfield Control Groups, Port Operations Groups, and the DLA's Deployment Support Teams. Where feasible, these units will be combined to form joint Distribution Management Centers that control the distribution process throughout the pipeline.

Establishing and supporting ISBs will take advantage of both US and foreign-based contingency contracting support. Contingency contracts such as the Army's Logistics Civil Augmentation Program (LOGCAP) have a proven capability to quickly respond to crisis scenarios and provide a wide range of services, including material handling at ports and airfields, vehicle and weapons systems maintenance, fuel support, billeting, food ser-

vice, sanitation, waste management, and security. The use of foreign and host nation resources also greatly increases the capacity to deploy combat forces by decreasing the requirement to transport support assets and personnel from CONUS to the theater.

While ISBs are focused on deploying and supporting JSF ground and naval components, FOL/Bs will support the rapid generation of strike aircraft sorties from Aerospace and Naval Expeditionary Forces. If close enough to the operations area, FOBs can also provide support bases for special operations forces elements; rotary-wing and V/STOL-delivered assault force; and tactical personnel and equipment recovery units.

6.2.2 CONCEPT OF SUSTAINMENT

Like the concept of deployment, the concept of sustainment will integrate and synchronize all resources available to support JSF operations, from the CONUS industrial base to the support elements in the operations area. This includes military and civilian capabilities that today are associated with the strategic, operational, and tactical levels of war. The JSF rapid response focus will constrain the sustainment that arrives with initial forces. Tailored strategic, mission, and unit configured sustainment packages will need to be integrated early in the deployment flow. JSF CONUS-based components will deploy with minimum basic combat loads and buffer stocks, relying on logistics situational awareness, asset visibility, and the distribution system to provide requirements at the right time and place. Requirements will be minimized and integration optimized by enforcing common standards for JSF weapons systems, combat support systems, packaging, and containerization.

The JSF will operate on a non-contiguous, dispersed battlespace that does not contain rear, intermediate, and forward areas of operation. This battlespace will not have secure or semi-secure areas for logistics bases or surface transportation routes that can be used to echelon supplies to combat forces located in forward areas. The ground maneuver elements will operate as integrated task forces that will include combat, combat support, and combat service support elements. Maneuver force commanders will have direct command and control over all elements in the task force, including logistics elements. Ground maneuver forces will maintain an unprecedented level of agility and mobility by operating with minimum combat loads and buffer stocks.

Combat and combat service support elements usually assigned in general support or to provide common-user item support to the operations area will be agile Mobile Combat Service Support Elements (MCSSE) coordinated and directed by the JSF Logistics Cell. These elements will be assigned areas of responsibility and will provide critical fuel, munitions, water, rations, and medical support to all combat elements that maneuver into their areas, including ground and rotary-wing aviation elements. MCSSEs will maintain a small footprint by maximizing reachback to on-call stocks and capabilities located at ISBs, FOL/Bs, or CONUS bases. These units will use the CROP to avoid all adversary formations, but will also have self-protection capabilities to mitigate the threat of surprise encounters with small groups of adversary or guerrilla forces.

6.2.2.1   Supply Support

The JSF will not use today's process of inventory-based supply support where large stocks of supplies are echeloned forward from CONUS to intermediate support bases to the forward line of troops. Instead, JSF supply support will be based on an efficient and robust distribution system that integrates small inventories, materiel management, material handling support, transportation capabilities, and support infrastructure. The distribution system will be a network of Joint Distribution Management Centers that extend from CONUS to the operations area. ISBs and FOL/Bs will provide the infrastructure hubs that receive and process supplies from CONUS-based depots and commercial vendors, Service and DLA pre-positioning programs, or theater-based commercial contracting support. Supplies are either expended at ISBs and FOLs by tenant units or throughput to maneuver elements conducting operations in the JOA via aerial delivery or delivered by V/STOL, rotary-wing aircraft, and fixed-wing aircraft that conduct airland operations. Information management systems will provide visibility of assets and inventories in the distribution pipeline. This will keep the footprint minimized and provide the most responsive support feasible to JSF elements.

Ground forces conducting deep inland operations will maximize aerial delivery; rotary-wing and V/STOL internal and external delivery; and airland delivery capabilities. Supplies can either be air dropped into drop zones or airlanded at ATSBs. Ground forces conducting coastal operations will receive supplies via over-the-horizon landing craft at coastal resupply points or from rotary-wing aircraft at Forward Arming and Refueling Points. These maneuver elements will take full advantage of recently, or soon to be, fielded enhanced materiel handling and transportation support equipment, including the Container Roll In/Out Platform, the Load Handling System (LHS), and the Palletized Load System (PLS). The LHS and PLS are truck systems that have the unique ability to self-unload and load Container Roll In/Out Platforms without the use of external MHE support. This equipment will provide a much more efficient capability to transport bulk supplies on the battlespace.

Recent innovations in aerial delivery and external rotary-wing transport will also be leveraged. These systems include the Semi-Rigid Deployable Wing, Guided Parafoil Air Delivery System, and the Ultralight Powered Parafoil. They can provide GPS-guided delivery of small and large payloads using high offset delivery profiles. These capabilities will greatly enhance our capacity to support ground operations via aerial delivery, and reduce or eliminate the historical requirement to build support bases in the operations area.

The JSF will employ an integrated approach to ground, sea, and air distribution systems. For example, Container Roll In/Out Platforms will contain multi- or single-commodity supply packages configured at CONUS bases, ISBs, or sea-based platforms for general use by JSF forces or configured specifically for a mission or unit, i.e., Strategic, Mission, and Unit Configured Loads. These platforms will be air dropped or airlanded to elements conducting deep inland operations or transported via over-the-horizon

landing craft to elements conducting coastal operations. At the drop zone, airfield, or coastal resupply point, empty or partially empty Container Roll In/Out Platforms will be downloaded from LHS and PLS trucks and traded for newly arrived full Container Roll In/Out Platforms. If feasible and more efficient, instead of trading Container Roll In/Out Platforms, full and empty trucks can be traded at airfields and coastal resupply points. This concept can also be extended to smaller delivery packages such as the Container Delivery System (CDS) used in air delivery operations. The CDS can be delivered by fixed-wing or rotary-wing aircraft, and transported by medium and light trucks or expended on site. This integration of ground and air transportation and handling capabilities will provide the foundation for a responsive distribution system within theater.

Although supply inventories will be echeloned along a pipeline that runs from the JOA to CONUS similar to today's operations, this pipeline will be very narrow and precise at the operational end. The ground maneuver elements will maintain a basic combat load and a one-day stock of critical supplies (fuel, ordnance, medical, water, meals, and batteries) based on a combat-expended rate. The MCCSEs will also maintain a small buffer stock of critical supplies to provide redundancy and a surge capability. This inventory in the operations area will act as a buffer stock for unplanned expenditures or disruptions in the distribution system. This is not an absolute rule, and the mission can drive adjustments in organic inventory of all or some classes of supply. But the Combat Service Support (CSS) footprint will be kept to a minimum to support complete mobility of logistics assets and security through rapid movement and integration with the combat element.

6.2.2.2 Bulk Liquid Support

The capability to deliver bulk liquid via air platforms is key to eliminating the current requirement that forces joint force commanders to establish fixed support bases in the operations area. Fuel support for ground forces will be provided by distributing air-transported fuel from ISBs to CSS element trucks with mounted modular fuel cells and pump units such as the 900 gallon capacity SIXCON unit. This concept will depend on a robust capability in systems such as the Robertson Refueling System. The Robertson system includes 800-gallon rigid fuel cells, and pumps and hoses that can be composited to expand or contract capacity and internally transported in medium and heavy lift helicopters and fixed-wing aircraft. In exercises, a CH-53E helicopter with three cells on board has refueled a company of light armored vehicles in less than an hour.

Bottled water will be the primary packaging method for personal consumption. Military water bottling systems will be established at ISBs or, where available, commercial contractors will provide bottled water support. Bulk water requirements for decontamination operations or personal hygiene will be on call and delivered as required via the same type of systems used for bulk fuel.

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6.2.2.3 Munitions Support

Along with fuel, munitions has historically been the greatest logistics burden during contemporary military operations. Recent innovations in guided and long-range remotely delivered munitions and missiles, and common user munitions should greatly reduce the support requirement in the operations area. The JSF will have the advantage of air-delivered Joint Direct Attack Munitions (JDAM) and laser-guided bombs, sea-delivered Extended Range Guided Munitions and tactical missiles, and ground-delivered extended range and guided artillery and missiles. Although overall munitions requirements should be reduced, precision munitions will be a massive requirement to fill in support of the JSF. However, this requirement should be more of a burden to theater ISBs and FOLs, enabling a logistics flexibility in the operations area that has never previously been realized.

6.2.2.4 Maintenance Support

The concept of maintenance support is based on component and end item replacement. Components will be evacuated either to CONUS-based depots or else theater-based joint intermediate maintenance facilities located at ISBs and FOLs that include both military and commercial contract capabilities. Supporting JSF elements will require a robust capability of combat spares of components and major end items. An initial operating stock will be required as part of pre-positioning programs to meet air, ground, and sea combat system requirements until the distribution pipeline is established.

Supporting ground maneuver elements will be a great challenge. If feasible, repairs on ground equipment will be conducted in the JOA by maneuver element operators, mechanics and technicians, or on-call Combat Repair Teams from ISBs. If equipment is too damaged to be repaired in an austere environment, it will be evacuated to an ISB or sea-based platform and replaced. If evacuation is not feasible, equipment will be destroyed. The JSF will also employ a liberal cannabilization policy of parts and components to maximize equipment readiness and minimize combat losses.

6.2.2.5 Medical Support

Medical support will be provided by a joint system that integrates forward stabilization capabilities, rapid medical evacuation capabilities, robust theater treatment centers, and CONUS-based definitive care centers. Casualties will be stabilized by Mobile Forward Surgical Support Teams attached to the maneuver elements. These teams will take advantage of recent innovations in trauma care to include the Fibrin Bandage that stops the bleeding caused by trauma wounds, the diagnostics glove that supports a rapid and automated diagnosis capability, and telemedicine capabilities to reachback to remotely located specialists for consultation. These teams will stabilize the critically wounded for evacuation and provide a short-term holding capability if the evacuation system is disrupted.

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Because the support footprint in the operations area is very limited, the medical support system must include robust air evacuation capabilities that have dedicated fixed-wing and rotary-wing aircraft assets. Casualties will be evacuated from the battlespace to sea-based platforms, joint medical support facilities at ISBs and FOBs, allied country medical facilities, or CONUS-based treatment facilities. Joint medical facilities will include aeromedical evacuation units and expeditionary Fleet Hospital units at ISBs and FOBs to provide treatment, holding, and facilitate onward movement of casualties to CONUS. This concept will take advantage of Air Mobility Command's recent initiative to replace retiring C-141 aeromedical platforms with more agile C-130s. The tactical evacuation capability will rely on the ambulance variant of the Blackhawk helicopter, dedicated MV-22s and heavy lift helicopters, and opportune lift from fixed-wing and rotary-wing air assets retrograding from the battlespace.

6.2.2.6   Maneuver Support

Maneuver support (MS) will be a critical enabler in all phases of military actions throughout the full spectrum of operations. The employment of a JSF will require the support of Engineer, Military Police (MP), and NBC personnel and equipment to assist in the achievement of operational and tactical advantage with respect to the adversary. The scope of MS will vary with the nature of the situation and the adversary posture, but in the early planning stages of potential hostile situations (IPB), all MS capabilities will be considered, specifically some of the following:

- ▶ Robotics/Tele-operated Equipment

- ▶ Digital Topographic Systems

- ▶ Stand-off Detection and Identification

- ▶ Networked Sensors and Minefields

- ▶ Non-Lethal Weapons (NLW)

- ▶ Force Protection

MS planning within the span of *effects-based operations* will not only consider support to friendly operations, but also will consider such factors as minimizing collateral damages to personnel, property, and the environment. These considerations of effects-based planning will affect adversarial perceptions of US and coalition forces and international public opinion (i.e., the media).

Engineers

In planning for future JSF contingencies, engineer support will be a prime enabler to:

- ▶ allow JSF land mobility during movement and sustainment,

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▶ . establish counter-mobility/area denial plans that will shape and define the battlespace, and

▶ provide force protection/protection of others.

Engineers will plan for the utilization of robotic and tele-operated equipment, along with the use of suites of internetted sensors. This expertise will assist in the freedom of maneuver by minimizing the exposure of troops to the adversary's asymmetric threats such as mines and ambushes. Digital topographic technology will allow for quick access of current mapping information from linked space systems, and the rapid reproduction and dissemination of these products. Engineers will provide terrain analysis support during the IPB process and throughout the duration of military campaigns. Engineer plans must ensure accurate assessment of obstacles and efficient allocation of resources.

Engineer operations will focus on providing information, personnel, and equipment that will assist in gaining survivability, mobility, and counter-mobility. The I&O Cell will plan for engineer support, integrate it with the scheme of maneuver of supported units, and synchronize the engineer effects and movements. When needed, engineer earthmoving and bridging assets will be available to the elements of the JSF. The robotic technologies that will be available in 2007 will provide many uses in the areas of force protection (CONUS and abroad), and in the detection/marking, and neutralization of surface-laid mined areas.

Another important engineer contribution to the JSF is the ability to plan for and deploy internetted suites of sensors and minefields. Information concerning adversary movement from the areas where these systems are emplaced will feed real-time intelligence into the CROP and provide additional adversary and friendly *situation awareness*. Engineer representatives will coordinate all operations with JSF Headquarters Staff, to ensure that effects and friendly obstacles are incorporated into JSF effects plans.

Military Police Support

MP support will be a crucial function throughout the full spectrum of operations, both in the CONUS as well as in the combatant JOA. MP support either will be provided by the Service components, or will have to be an augmented force to the Service components during initial work-ups and force assignment (METT-TSL).

MP forces will play a vital role in the process of movement to deployment, within CONUS. Asymmetric adversary forces will be likely to attempt to deny US forces the ability to deploy from home bases, APODs, and SPODs. In such a case, sequential recall and C2 procedures must be utilized to assure smooth movement, and provide force protection and High Value Asset (HVA) security. MP forces and Army National Guard forces will provide installation security and convoy escort when needed.

MP support to the JSF forces in the combatant JOA will be in various forms during military conflicts. Besides force protection and maneuver escorts, MP roles will be more

vital than in the past. Throughout the entire spectrum of operations, their roles are varied and essential. MPs will be required to perform EPW/CI collection, processing, and evacuation. These tasks can become very complex and personnel intensive. Also of invaluable importance are the linkages formed between MP forces of the Joint Services, Coalition, and host nations. These cultural linkages are very important in the design and establishment of joint ROEs, and in the gathering, exchange, and interpretation of police intelligence. Infantry units can also be trained, as an additional duty, to accomplish some basic MP functions; this training will assist in the execution of extreme need of law enforcement personnel.

NBC Support

With the proliferation of weapons of mass effects (WME), in many rogue nation states, the JSF planners will have the ability to utilize all available intelligence assets to accomplish NBC IPB prior to arrival into a JOA. The JSF will have state-of-the-art equipment that will allow them to establish an architecture that will permit combat forces to sense, shield, medically treat, and sustain combat operations in a contaminated or possibly contaminated area. NBC personnel must diligently train to establish seamless procedures within units of the JSF in the case of an attack with WME. In addition, consideration must be taken as to the possibility of repercussions when providing medical treatment to non-military personnel or refugees.

All air and ground units will be trained in personal protective countermeasures, and they will carry the required personal protective garments, equipment, and sensor and detectors for a low-threat environment. If JSF forces are deployed into a theater where the possibility of an NBC threat does exist, all preventive measures will proactively be taken, including inoculation. Decontamination sets of equipment and personnel can remain on alert at the nearest ISBs for support of the distributed operating forces. NBC personnel will have done the best possible research concerning the potential treatment facilities within the CINC's AOR.

6.2.3 JOINT LOGISTICS MANAGEMENT

If JSF combat operations will be conducted in an integrated joint environment, then the deployment and logistics management must also be integrated and joint. Service-unique logistics concepts, organizations, and systems will degrade the efficient use of deployment and support resources. The logistics management network will enable the JSF Commander to exercise positive control of the entire logistics pipeline from the CONUS or theater source of supply or support to the support elements filling battlespace requirements in the operations area. This will optimize the reach and responsiveness of the JSF and minimize the support footprint in theater by eliminating or reducing duplication of logistics efforts among the components.

In the theater of operations, logistics will be synchronized and integrated under the Joint Theater Logistics Management (JTLM) concept (see Figure 17 on the next page). This Joint Staff initiative calls for each theater CINC to develop and implement a plan

that will centralize the management of theater logistics under a single process or organization. The JTLM will provide support functions that are typically associated with an Army theater support command to include the following:

- ► Reception, staging, and onward movement of forces

- ► Common-user supply support

- ► Intermediate aviation and ground maintenance support

- ► Intra-theater air, ground, and sea transportation support

- ► Distribution and materiel management

- ► Construction and civil engineering support

- ► Commercial contracting and host nation support

- ► Personnel, administration, and finance support

The JTLM will provide the link between CONUS support organizations, theater support organizations, and the support elements in the JSF. The JTLM will provide support based on the JSF Commander's priorities that are communicated by the Deployable and Fixed Headquarters Elements. The JSF Fixed HQ will monitor the logistics status and readiness of all JSF units and ensure that the JTLM has a common logistics picture to plan support for current and future operations. Unplanned or emergency requests will be communicated from combat or support elements in the JOA to the JSF Fixed HQ or directly to the theater supporting organization.
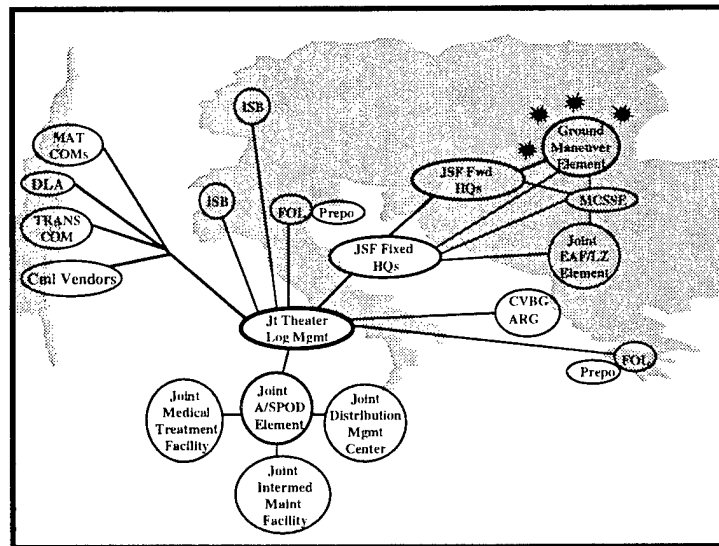
Figure 17.   JSF Command and Control of Logistics

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JSF logistics command and control relies on assured, real-time communications support and a host of Web-based logistics information management concepts and systems currently under development or being fielded (see the next table). The joint deployment concept will be supported by a recent JCS initiative to validate the Time Phased Force Deployment Data (TPFDD) for a crisis action plan in 72 hours.

Table 4. Logistics and Deployment Information Systems

Systems	Asset Viability	Pipeline Capacity	Pipeline Control
Global Command and Control System (GCCS)	—	—	X
Global Combat Support System (GCSS)	X	—	—
Joint Total Asset Visibility (JTAV)	X	—	—
Global Transportation Network (GTN)	X	—	—
Analysis of Mobility Platform	—	X	—
Automatic Identification Technology	X	—	—
Worldwide port System (WPS)	X	—	X
Consolidated Aerial Post System II	X	—	X
Transportation Coordinators' Automated Information for Movement System II	X	—	X
Joint Force Requirements Generator II	X	—	X
Joint Operation Planning and Execution System (JOPES)	X	—	X

To support this initiative, the Services have been directed to transition to the Transportation Coordinators' Automated Information for Movement System II (TC-AIMSII) and the Joint Force Requirements Generator II (JFRG II) for component-level deployment planning and execution. Joint Total Asset Visibility (JTAV), Global Transportation Network (GTN), Worldwide Port System (WPS), and radio frequency identification systems will support asset visibility in theater, in-transit visibility, and situational awareness of transportation terminal capacities.

The Global Combat Support System (GCSS) and its family of subsystems will support a real-time logistics Common Operating Picture (COP), predictive analysis and decision support, and collaborative planning with GCCS-based operational systems. GCSS can receive requirements that have been consolidated by the Combat Service Support

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Control System from Force XXI Brigade and Below (FBCB2) systems. Or FBCB2 logistics situation reports can feed directly into GCSS.

Information systems under development will provide great advantages over the current environment, but shortfalls have been identified. These gaps include a lack of adequate decision support and planning tools that will automatically synthesize data, monitor plans, and provide forecasting and trend analysis support. However, other developments, such as DARPA's Advanced Logistics Project (ALP), could help fill these gaps and prove very valuable in the near term. ALP is a Web-based system that uses automatic information-sharing technology to provide real-time access to multiple logistics databases distributed throughout a global network.

Chapter 7. Communications and Computers

The distributed nature of the JSF Headquarters, the rapidity of planning and deployment, and the synchronization of effects require that the JSF be structured around information. Information systems used by the JSF must provide for decision superiority, distributed planning and operations, and current operation monitoring and direction. These communications and computer systems must provide assured, secure, uninterrupted communications connectivity between all forces, platforms, and command centers. Collaborative planning systems will require sufficient bandwidth for reachback to rear staffs and planning centers. As mentioned previously, the JSF Headquarters will deploy with a small communications detachment, which may not be a requirement if the JSF Headquarters is sea based.

7.1 COMMON RELEVANT OPERATIONAL PICTURE

The most important capability required of the JSF Headquarters is the availability of a CROP. The CROP is defined as a presentation of timely, fused, accurate, assured, and relevant information that can be tailored to meet the requirements of the Joint Task Force, and is common to every organization and individual involved in a joint operation. In essence, it is the *single* common operational picture for use by all joint forces. For the JSF, the GCCS will provide the backbone for the CROP. Numerous tactical and strategic information systems will contribute to populating the CROP database, including the Global Broadcast System (GBS), JWICS, Link 16, JVMF, and others.[56]

7.2 COMMON TACTICAL PICTURE

The CTP provides the JSF Headquarters with the ability to:

▶ monitor the battlespace,

▶ dynamically employ fires, and

▶ maneuver to achieve desired operational effects.

At the unit level, the CTP provides the near real-time picture that is required for tactical engagements. Interoperability between tactical reporting systems such as Link 16 and a Joint Variable Message Format (JVMF) network is key to enabling the CTP. RSTA

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[56]USJFCOM. 1999. *Common Relevant Operational Picture*. White paper. Norfolk, Virginia: US Joint Forces Command.

systems must be able to update the tactical picture in real time, providing precise position location of adversary, friendly, and neutral units.

ABCS functionality allows fusion of the C2 systems into a single integrated ground picture. The SIAP will provide the air portion of the CTP. There are many other systems fielded and under development that will contribute to a common picture of the battle-space. Whatever the solutions to providing a common picture will be, the imperative is that the JSF must have a common tactical picture that can be used for command and control of assigned forces operating within the JOA.

7.3 BLUE FORCE TRACKING

The forces employed by the JSF require a capability to report their position and be seen in the JOA in a timely fashion. In some special circumstances, such as special operations forces in deep cover, this requirement will be suspended—yet general operating areas should be known. Digitization of ground units through the capability provided by FBCB2 will provide precise location in near real-time of friendly ground forces. This location capability can be augmented by specific Blue Force tracking methodologies on personnel not equipped with FBCB2 systems.

7.4 JOINT CONTINGENCY PLANNING

The rapid nature of JSF operations means that the planning cycle must be reduced from days to hours or even to minutes. Courses of action are developed and compared through continuous, distributed simulations using current information about all forces. Displays and planning tools permit the Commanders and staff to compare situations and plans, and to change both easily and consistently. People and databases involved in dynamic planning and execution control may be separated by thousands of miles, but are able to collaborate through virtual meeting facilities. As the crisis unfolds, the JSF Commander updates plans continuously en route to the JOA and arrives prepared to direct and coordinate combat operations at any time and from any location. To offer such clarity, contingency planning would have to be more dynamic, capable of being updated quickly and continuously, and enabled by the following:

▶ Automated tools to quickly identify and contrast various adversary and friendly courses of action, with the ability to adjust the plan while running vignettes.

▶ Integrated information infrastructure to provide ready, user-friendly access to common information sources for all echelons of authority and all services.

▶ Collaborative planning capability that provides white board, document exchange, chat, voice, video, and virtual conference rooms.

- Databases, pre-formatted to correspond to planner's requirements, developed by distributed centers of expertise and disseminate via secure, high capacity communications.

- Search engines to give planners quick access to the information they need and when they need it.

- Common grid systems for land, air, sea, and space forces, enabling linkage of sensors, shooters, and information systems. Map overlays that allow scaling and integration of photographic intelligence.

- Visualization aids to easily convey a CROP.

The Joint Interactive Planner (JIP), currently being explored by the US Joint Forces Command, is a program that will give the JSF this desired capability. The JIP is a combination of advanced interactive planning tools that allow automated planning and decision support in a distributed environment; it is also a planning process that enables rapid deliberate and crisis action planning. Central to this capability is enhanced battlespace awareness through the CROP and a collaborative planning tool that enables virtual planning conferencing with CONUS-based planners and forward deployed components. The En Route Mission Planning System (ERMPS) is an example of a capability required for the JSF. The JIP system will tie together Deployable and Rear Headquarters with Major Commands, their planning and C2 organizations, CINC theater support, and CONUS support. Appendix B contains some of the technologies and systems being explored to satisfy these requirements.

7.5 COMMUNICATIONS RELAY CAPABILITY

The dispersed operational environment employed by the JSF and the need to be rapidly deployable requires that the JSF have significant communications relay capability. In addition to C2 facilities, ground, naval, and air units will need access to this capability. Manned or unmanned aircraft, satellites, and unmanned ground vehicles can accomplish this function.

PART 3.
APPENDICES, BIBLIOGRA-
PHY, ACRONYMS AND
ABBREVIATIONS

APPENDIX A. USA COMMENTS

1. Standing JTF HQ.

a. The Army supports efforts to reduce the ad hoc nature of forming JTF and CJTF HQs in response to natural and man-made crises. Implementation of this concept, however, is problematic in terms of how many HQs are required, how they might be resourced, and how they would actually be integrated into CINC operations. Also, while each service has a perspective on the value of this concept, CINC views should guide any effort to implement the concept.

b. The paper fails to make a compelling case for Standing JTF HQ. The requirement for 350 billets in four or five CINCs adds up to 1400-1750 new joint billets. This is a significant resource requirement that one round of experimentation has failed to justify. Associated costs for operating, training, equipping and maintaining each JTF HQ must be resourced, both in terms of dollars and TEMPO. The paper lacks the strategic and operational justification for a Joint Strike Force. It is intended as a solution to upper level Small-Scale Contingencies. But using Kosovo as the most recent example, it is unclear how JSF would have contributed any more to NATO success in that conflict than the current organization. Much of the lessons are political and diplomatic; JSF is an attempt at a military solution to these non-military issues.

d. Recommend examining built-in JTFs within CINCs along the lines of CENTCOM. CENTCOM has Service components organized into JTFs which can quickly expand into larger JTFs or functional components of the JFC. For example, ARCENT (Army) has JTF-Kuwait which can become the JFLCC, and CENTAF (Air Force) has JTF-SWA which can become the JFACC. We do not see an added benefit to CINCCENTCOM from an additional JTF HQ commensurate with the costs to the Services in manpower. Army Transformation envisions its component commands as JTF and JFLCC-capable.

e. Still far too many issues to be resolved to embrace this recommendation without an action plan, e.g. roles and responsibilities of Service component commands.

2. Time Frame. The JSF Concept is a result of Defense Planning Guidance Update FY02-07. Recommend limiting technological enablers to those programmed. Current version relies on technology (sensors, artificial intelligence, information technology) that will not be available prior to 2007.

3. JSF is worthy of further experimentation and consideration. Recommend rolling the JSF Concept, as well as the recommendations of the Newport Group, into the overall JFCOM Experimentation Campaign.

APPENDIX B. USMC COMMENTS

MEMORANDUM

From: SIG, HQMC
To: JAWP

Subj: COMMENTS ON JOINT STRIKE FORCE OPERATIONAL CONCEPT THIRD   DRAFT

1. Improved operational capabilities designed to eliminate the current ad hoc approach to JTF headquarters formation are worthy of study and consideration. The Draft Operations Concept currently under review describes the results of a productive academic exercise to define improved organizational alternatives to better prosecute upper-level, smaller-scale contingencies; however, it does not provide a desirable or executable concept.

2. First, we should establish what the requirement is. We know of no CINC or Service who has articulated a need for a JSF force. A case needs to be made for why DoD should be investing in such a rapid response capability. It should not be assumed that quicker is necessarily better. It is not clear how such a military capability, as described in the concept, would fit into existing or foreseeable diplomatic or political decision-making environments. Second, we need to examine the most likely and most dangerous potential threat scenarios. Arguably, the JSF addresses neither. As written, the JSF would be most effective against non-peer powers possessing conventional and symmetrical military capabilities – the least likely scenario. The luster of gleaming new technologies should not divert our gaze from the dirty, dull realities of warfare. Assuming that the enemy will just give up after a series of precision strikes and that we will have near perfect knowledge and perfect C2 systems to convey it are all dangerous assumptions.

3. The original JSF charter was to define a better way of employing forces in the 2007 timeframe, recognizing that with few minor exceptions, the capabilities available would be those existing today or in the current POM. The capabilities postulated in this Draft are not supported by the Program. By calling for significant capabilities beyond the Program, the Draft looses touch with reality, compromises its utility, and violates the project's charter.

4. The Concept is not balanced in its treatment of maritime, land, air, and IO capabilities. It is focused too heavily on traditional Air-land maneuver (seize airfield/flow follow-on forces, etc.).

5. The JSF organization as described in Section 2.3 needs clarification. It calls for multiple levels of joint commands. The proposed construct confuses chains of command, violates unit integrity, and gives excessive centralized control to the JSF Headquarters. In short, it shifts the current ad hoc approach to JTF formation down to the tactical forces, thus enhancing the problem the concept was intended to fix. Further, the postulated 50 man forward headquarters cannot perform the tasks assigned to it. By calling on the JSF Headquarters to perform tasks currently assigned to components, the concept places an inordinate burden on a single headquarters element. What would happen if the airborne command post went down? The concept unnecessarily creates a single point of catastrophic failure.

6. While a useful academic exercise, we do not recognize this Operational Concept as valid, desirable, or executable.

APPENDIX C. USN COMMENTS

MEMORANDUM FOR INSTITUTE FOR DEFENSE ANALYSES/JOINT ADVANCED
                  WARFIGHTING PROGRAM

Subj: NAVY COMMENTS ON JOINT STRIKE FORCE OPERATIONAL
       CONCEPT

Ref: (a) Joint Strike Force (JSF) Operational Concept,
          Third Draft dtd 05 Jul 00

Encl: (1) Navy Staff Comments on the JSF Operational
           Concept.

1. Overview. Navy appreciates the opportunity you provided to
participate in the development of the Joint Strike Force (JSF) concept.
We recognize that the timeframe allotted to this study was short and
therefore did not permit the extensive analysis that you desired to
fully develop this concept. The Navy believes, however, that key aspects
and assumptions of the JSF concept are not valid and does not concur
with the JSF Operational Concept as written.

     The JSF concept requires much further development and
evaluation/validation through joint experimentation to resolve the many
problems identified during the course of the current study with a JSF
and standing JSF headquarters (HQ). By not identifying the problems
identified nor including alternative solutions presented by the
Services, we believe that the JSF Operational Concept overstates the
degree to which this concept has been developed and, consequently, could
adversely affect needed programs if misinterpreted by those not directly
involved in the study. Time constraints have also prevented the
Services from fully vetting this concept through their operational and
administrative staffs and Navy would appreciate the opportunity to do so
to further the development of this important concept.

     Navy critical concerns with the current JSF operational concept
focus on four areas:
- The presumption that a standing HQ is required to conduct rapid
  planning and execution of rapid and decisive operations.
- The presumption that the one correct answer is a 350-man HQ staff
  operating in two shifts is sufficient to permit effective command and
  control of a high-end SSC for up to 30 days.
- The issues associated with apportioning forces to five standing JSF
  HQs.
- The requirement for more rigorous analysis.

2. Requirement for a Standing Headquarters. Navy does not concur with
the presumption of the JSF Operational Concept regarding a standing JSF
HQ. The JSF concept did not analyze or demonstrate that the HQ structure
identified in the operational concept would be an effective or efficient
means to mitigate the deficiencies associate with past ad hoc JTF HQ
stand-ups. In fact, there appeared to be critical deficiencies with the
standing JSF HQ concept identified during the Red Teaming wargame. The
study also failed to show that other HQ alternatives using programmed
capabilities and manpower would not work, including the Navy alternative
identified below.

As the JSF Operational Concept points out (page 12), standing JTF HQs are "not fiscally supportable". Current and projected Service end-strength will not support the personnel requirements identified by this concept. Drawing on the Services to support the number of personnel required (1800 plus an unidentified number of communication specialists and liaison personnel) to fill the staff and liaison billets required by this concept would significantly impact the Service's ability to provide core competency warfighting capabilities. Additionally, all of the functional requirements of the standing headquarters concept -- during both peacetime and crisis -- are redundant to current Unified CINC and Component Commander responsibilities. It is neither efficient, affordable nor executable within current end strength to establish redundant headquarters within each Unified CINC's AOR.

3. Staff Size. There is no analytical basis for the presumption that a small, 350-man HQ staff operating in two shifts is sufficient to permit effective command and control of a high-end SSC for up to 30 days. The conjecture that only a small staff will be needed is based upon a broad premise that efficiencies in HQ organizations can be derived through technological enhancements and information superiority. While this maybe true, the JSF concept has failed to identify how this will occur or what system or systems will enable the connectivity needed at all levels to permit operational command and control capability to conduct rapid, simultaneous combat operations in a dynamic warfighting environment. Broad assumptions are also made that a robust communications architecture with seemingly unlimited bandwidth will be available. It is important to note, but not pointed out in the concept, that the significant enhancements in communications and decision aid technology required by the JSF to successfully execute its mission in the 2007 timeframe are not currently programmed.

4. Apportionment of Forces. When not involved in JSF crisis response operations, the combat forces apportioned to each JSF HQ will conduct training exercises and execute CINC-directed peacetime engagement activities. This function of the JSF HQ is redundant to and will significantly impact Service Title X responsibilities to train, organize and equip combat ready forces to conduct operations from peacetime shaping to crisis response (SSC) to war (MTW). The relationship between Service and JSF responsibilities to train, organize and equip combat forces is a critical element of executing the JSF concept yet it is not addressed. Other key elements not addressed that significantly affect whether this concept is executable are the exact composition of forces that will be apportioned to each standing JSF HQ; the lift required to deploy apportioned forces to each theater and whether the needed lift has been funded; and the inter-deployment training cycle that will be used to prepare the JSF to deploy as a joint warfighting team.

5. Lack of Analyses. The JSF concept requires further analysis in the following areas:
- Skill sets required by JSF HQ elements
- Distribution of functions between JSF forward and rear elements
- Requirements for inter- and intra-theater capacity and capability to deploy and sustain JSF-like peacetime and combat operations.
- Ability of the joint force and Services to field the additional capabilities required by 2007 to execute JSF and the impact on current programs.
- The impact implementing the JSF concept (a force sized and shaped for a 30-day SSC) will have on the military's ability to fight and win two MTWs.

- Identify the composition of forces that will be apportioned to the five JSFs, their interdeployment training cycle, and how this apportionment will impact the flow of forces to MTWs.
- Will execution of the JSF concept induce systems that are now in sufficient quantity into a category of high demand/low density?
- How will deconfliction of an air intensive operation be controlled (TACAIR, Logistics, Cruise Missiles, Artillery, Tactical Maneuver Elements, UAVs and manned ISR platforms all operating simultaneously in limited airspace and behind enemy lines)?
- What are the required tasks associated with the JSF HQ and can a staff 350 effectively manage the complexities of the force envisioned in the concept? This includes embedding the functions of the Component Commanders (JFLCC, JFACC, and JFMCC) in the JSF HQ.
- What additional billets would be required to provide the necessary liaison teams to the supporting CINCs, Agencies, NGOs, and PVOs?

6. <u>Alternatives</u>. Navy believes that there is a better alternative to a standing HQ to conduct rapid, decisive joint operations. Accordingly, after extensive analysis, the Chief of Naval Operations sponsored a fleet-wide conference 20-22 Jun 00 that identified a conceptual means of rapid JTF HQ stand-up utilizing current and projected forces and manpower. The conference focused on identifying a structured process to support Navy's ability to efficiently and effectively improve the rapid stand-up and augmentation of a robust JTF HQ staff with qualified personnel. Specific goals included identifying a common required manning structure for a Navy-led JTF at the Component Commander level, reach consensus on a process for Navy support to the rapid stand-up and augmentation of a JTF HQ staff, and initiate development of a POA&M for Navy-Wide Implementation of this process. The Navy augmentation plan -- and supporting required training -- will be coordinated with the Services to pre-identify Service-specific augmentation requirements.

The conference validated Navy's premise that a well trained, educated and networked core organization (approximately 10-12 personnel) embedded in each Unified CINCs' staff and focused on operational planning could provide the core capability needed for rapid stand-up and coordinated command and control of a JSF-like organizational structure needed to conduct rapid, decisive operations. This staff would be augmented by previously identified personnel from CONUS and other staffs, and undergo annual coordination and planning training. If developed by all of the Services with a joint focus, this alternative concept is affordable, executable and should therefore be addressed by the JSF concept. We believe this alternative concept will better meet the requirements of the CINCs without creating the inefficiencies and redundancies of a standing JSF HQ.

7. Specific Navy comments have been imbedded in the JSF Operational Concept report and are attached. It is important to note, however, that since the entire JSF concept is based on a standing JSF HQ, Navy could only intermittently inject examples of where our concerns can be met with alternative language or where assumptions in the concept are not analytically supported.

APPENDIX D. USAF COMMENTS

JOINT STRIKE FORCE (JSF) OPERATIONAL CONCEPT

(Third Draft, 5 Jul 00)

1. GENERAL COMMENTS. With the possible exception of the Spanish American War and the Battle of New Orleans, Operation Desert Storm was the most successful military operation in American history. During Desert Storm, the single most significant planning and execution factor was delegation of air operations to a single commander and giving him the authority to defeat the enemy in detail through superior air power. This being recognized, it is hard to understand joint solution that smack of "centralized planning and centralized execution", as the JSF concept seems to do.

2. COMMAND & CONTROL. The JSF HQ concept based on functionally-oriented "cells" is a good move away from the current stovepipe staff structure. The current configuration and responsibilities of JFACC's and JAOCs are examples of joint organizational constructs that have successfully integrated this functional approach. Unfortunately, the JSF C2 CONOPS has not been adequately stressed to refine the exact functions of each cell within the proposed JSF HQ. More importantly, it proposes to absorb essential component command echelons, such as the JFACC. Component command echelons, while creating some seams, in fact reduces the span of control of the commander during complex operations. Within the JSF construct, absorbing the JFACC responsibilities into the JSF HQ does not take into account the complexities of centralized command and control of aerospace forces. Similarly, organizing aerospace forces into subordinate, functional task forces appears to be unworkable. The JSF wargames, which have typically used two AEFs and one CVBG as the base forces for a JSF, have clearly overwhelmed the C2 structure inherent in the proposed JSF CONOPS. It violates a basic time-tested principle, that aerospace forces must be centrally commanded and controlled.

3. DEPLOYMENT AND SUSTAINMENT. We support the idea of rapid deployment, but are concerned about the lift implications of the JSF concept. The JSF logistics issues identified that the airlift resource allocation required to get the Army's baseline force of the JSF in theater within 96 hours requires an MTW airlift effort. Of additional concern is that the lift requirements did not include the air elements of the JSF or the airlift required to sustain the forces in theater. JSF sustainment requirements must consider not only the sustainment requirements for the forces operating in the JOA, but also those based at ISBs and FOBs. Finally, the JSF concept needs to consider command and control, force protection and engineering requirements for operations into expeditionary APODs.

4. FORCE PROTECTION. The JSF concept requires additional attention be given to the force protection and sustainment of ground forces inserted deeply. The Red Team wargame resulted in a force-on-force attritional battle that did not exploit any U.S. technological advantages and could easily lead to excessive casualties. Failure to achieve an adequate degree of air superiority led to high losses among airlift forces.

5. JSF HQ MANNING. We support the concept of moving from the "pick-up" nature of JTF Command and Control to a standing headquarters team that trains, works, and exercises together. However, manning for a 350-person standing JSF HQ team in each of the five regional CINC headquarters will be difficult under current personnel and manpower constraints. All of the services will have great difficulty in providing personnel required to fill the new joint billets required. One alternative may be a smaller core of ~50 billets from the CINC staff with the remainder of the JSF HQ staff battle-rostered from component staffs.

6. PLANNING & TRAINING. Likewise, a JSF concept that ensures combat forces that might fight together in war train together in peace is certainly looking in the right direction. However, assigning specific units to each JSF on a rotational basis may be problematic for the AF, since the AEF construct is globally focused, and may not easily lend itself to the apportionment of dedicated units to regionally-based JSFs for planning and training purposes. This requires further development and discussion before it is proposed to OSD.

7. EFFECT-BASED OPERATIONS. The CONOPS must acknowledge the full potential of effects-based operations. The overall CONOPS does not reflect the combat power that true joint operations can generate. Several sections imply that the primary role of aerospace power in the JSF is <u>always</u> to support ground forces. Aerospace power has been the preponderance of combat power in the JSF wargames, a case that will be likely for most operations, since the JSF ground force component will be relatively light. Many of the effects desired by the JSF commander *may be accomplished better by exploiting the full potential of aerospace power* in many potential scenarios, with ground forces in a supporting role A broader CONOPS is needed that allows a more flexible application of military power to execute effects-based operations.

8. RED TEAM LESSONS-LEARNED. Related to the above is the lack of incorporation of the major lessons-learned from the JSF Red Team Wargame of 26-29 June, including: (1) the need for the JSF concept to better (there are not component commands in the JSF) fixed and forward responsibilities and command relationships; (2) the difficulties posed by the small size of the JSF staff; and (3) the large span of control of the JSF commander. These issues must be resolved through additional discussion, wargaming, and experimentation as required before the concept is finalized. Re-incorporation of component commanders would mitigate some of these issues.

9. SUMMARY. We support the overall JSF project, with the intent of providing the theater CINCs and NCA with overwhelming combat power in a 24 to 96 hour timeframe. However, the current CONOPS requires considerable refinement, and is not ready for OSD review. We stand ready to provide airpower expertise in support of a major rewrite of the operational concept. After analytical wargaming, the rewritten operational concept should then be submitted to the Joint Staff and the Services for review and comment, prior to submission to OSD,

USAF–2

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ACRONYMS AND ABBREVIATIONS

A

A/SPODS	Aerial/Seaport of Debarkation
AADC	Area Air Defense Commander
AAMRAM	Advanced Medium-Range Air-to-Air Missile
ABCCC	Airborne Battlefield Command Control Center
ABCS	Army Battle Control System
ABL	Airborne Laser
Abn	Airborne
ACA	Airspace Control Authority
AEF	Aerospace Expeditionary Force
AEGIS	AEGIS refers to a type of Navy cruiser.
AEW	Air Expeditionary Wing
AFATDS	Advanced Field Artillery Tactical Data System
AFFOR	Air Force Forces
AJC2	Adaptive Joint Command and Control
ALP	Advanced Logistics Project (DARPA)
Amph	amphibious
AOR	area of responsibility
APODS	Aerial port of debarkation
ARFOR	Army Forces
ARG	Amphibious Ready Groups
ASC2	Air Space Command and Control
ATO/ITO	Air Tasking Order/Integrated Tasking Order
ATSB	Advanced Tactical Support Bases

B

BDA	Battle Damage Assessment
Bdes	brigades

C

C2	command and control
C4I	command, control, communications, computers, and intelligence
C4ISR	command, control, communications, computers, intelligence, surveillance, and reconnaissance
CA	Civil Affairs; also Combat Assessment
CCIR	Commander's Critical Information Requirements
CDR	commander
CDS	Container Delivery System
CE	Communications Element
CEC	Cooperative Engagement Capability
CENTCOM	Central Command
CIA	Central Intelligence Agency
CIC	Combat Information Center
CINC	commander in chief
CJSF	Commander, Joint Strike Force
CLF	Combat Logistics Forces
Cml	commercial
CNN	Cable News Network
COA	course of action
COMM	communications
COP	Common Operating Picture
CONUS	continental United States
COTS	commercial off the shelf
CROP	Common Relevant Operational Picture
CROP	Container Roll In/Out Platform
CRT	Contingency Response Team
CSS	Combat Service Support
CTP	Common Tactical Picture

CVBG	Carrier Battle Groups

D

DARPA	Defense Advanced Research Projects Agency
DCST	Defense Logistics Agency (DLA) Contingency Response Team
DIA	Defense Intelligence Agency
DLA	Defense Logistics Agency
DoD	Department of Defense

E

ECOC	Experimental Command Operations Center (USMC)
ELINT	electronics intelligence
ENG	engineering
EPW/CI	enemy prisoner of war/civilian internee
ERMPS	En Route Mission Planning System
ERMPRS	En Route Mission Planning and Rehearsal System
EUCOM	European Command
EW	electronic warfare

F

FBCB2	Force XXI Battle Command Battalion/Brigade and Below
FECC	Fires and Effects Coordination Cell (Army)
FOL	Forward Operating Location

G

GBS	Global Broadcast System
GCCS	Global Control and Command System
GCSS	Global Combat Support System
GPS	Global Positioning System
GTN	Global Transportation Network

H

HA/HE	high altitude, high endurance
HQ	headquarters
HUMINT	human intelligence
HMMWV	high-mobility multipurpose wheeled vehicle
HVA	high value asset

I

IA	information assurance
IBCT	Intermediate Brigade Combat Team
IDA	Institute for Defense Analyses
IMINT	imagery intelligence
INTEL	intelligence
IO	Information Operations
IPB	Intelligence Preparation of the Battlefield
IR	Information Requirement
ISB	Intermediate Staging Base
ISR	intelligence, surveillance, and reconnaissance
IUGs	internetted, unattended ground sensors
IW	Information Warfare

J

J–2	Intelligence (Defense Intelligence Agency)
J–3	Operations
J–5	Strategic Plans and Policy
J–7	Joint Staff Operational Plans and Interoperability Directorate
J–8	Joint Staff Force Structure, Resources and Assessment Directorate
JAC2	Joint Adaptive Command and Control
JAWAC	Joint Warfare Analysis Center
JAWP	Joint Advanced Warfighting Program
JCDB	Joint Common Database
JDAM	Joint Direct Attack Munitions
JDN	Joint Data Network
JECB	Joint Effects Coordination Board
JFACC	Joint Force Air Component Command
JFCOM	Joint Forces Command
JFHQ	Joint Force Headquarters (UK)
JFLCC	Joint Force Land Component Command
JFMCC	Joint Force Maritime Component Command
JFN	Joint Fires Network

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JFRG	Joint Force Requirements Generator II	MCC	Mobility Control Center
JIOC	Joint Information Operations Center	MCSSE	Mobile Combat Service Support Elements
JIP	Joint Interactive Planner	MEB	Marine Expeditionary Brigade
JOA	Joint Operation Area	MEU	Marine Expeditionary Unit
JOPES	Joint Operation Planning and Execution System	MED	Medical
JSEAD	Joint Suppression of Enemy Air Defenses	METT-TSL	mission, enemy, terrain and weather, troops and support available, time available, space, and logistics
JSF	Joint Strike Force	MFOR	Maritime Forces
JSOTF	Joint Special Operations Task Force	MOG	maximum on ground
		MP	military police
JSTARS	Joint Surveillance Target Attack Radar System	MS	maneuver support
		MSR	major supply route
JTAV	Joint Total Asset Visibility	MTMC	Military Traffic Management Command
JTF	Joint Task Force		
JTIDS	Joint Tactical Information Distribution System		

N

NAVFOR	Navy Forces
NBC	nuclear, biological, chemical
NCA	National Command Authority
NGO	non-governmental organizations
NEO	non-combatant evacuation operation
NIMA	National Imagery and Mapping Agency
NIST	National Institute for Standards and Technology
NLW	non-lethal weapons

JTL	joint target list
JTLM	Joint Theater Logistics Management
JTRS	Joint Tactical Radio System
JTTP	Joint Tactics, Techniques, and Procedures
JVMF	Joint Variable Message Format
JWAC	Joint Warfare Analysis Center
JWICS	Joint Worldwide Intelligence Communications System

L

LAV	Light Armored Vehicle
LAWS	Land Attack Warfare System
LHS	Load Handing System
LNO	liaison officer
LOG	logistics
LOGCAP	Logistics Civil Augmentation Program

M

MAINT	maintenance
MANPAD	man-portable air defense missile
MARFOR	Maritime Forces
MASINT	measurement and signature intelligence

O

O&O	operational and organizational
OMFTS	Operational Maneuver From the Sea
OPNS	operations
OPSEC	operations security
OPTEMP	operations tempo
OSINT	Open Source Intelligence
OTH	over the horizon

P

PA	Public Affairs
PACOM	Pacific Command
PDD	Presidential Decision Directive

PIR	Priority Information Requirement	TEL	Transporter Erector Launcher
PLS	Palletized Load System	THADD	Theater High Altitude Area Defense
POE	port of embarkation; port of entry		
PREPO	prepositioned	TMD	Theater Missile Defense
PSYOP	psychological operations	TPFDD	Time Phased Force Deployment Data
PVO	Private Voluntary Organizations		
		TTP	Tactics, Techniques, and Procedures

R

RFI	Request for Information
ROE	rules of engagement
RSOI	reception, staging, onward movement and integration
RSTA	reconnaissance, surveillance, and target acquisition

TRANS	transportation
TRANSCOM	Transportation Command

U

UAV	unmanned aerial vehicle
UGS	unattended ground sensor
UJTL	Uniform Joint Task List
USA	US Army
USAF	US Air Force
USMC	US Marine Corps
USMTF	United States message text format
USN	US Navy
USSOCOM	US Special Operations Command
USSTRATCOM	US Strategic Command

S

SAG	Senior Advisory Group
SIAP	Single Integrated Air Picture
SAM	surface-to-air missile
SEAD	Suppression of Enemy Air Defenses
SHSS	Shallow-draft High Speed Sealift
SIGINT	signal intelligence
SIXCON	A type of modular shipping unit – not really an acronym
SJTF	Standing Joint Task Force
SOCOM	Southern Command
SOF	Special Operations Forces
SPOD	seaport of debarkation
STOM	Ship to Objective Maneuver

V

V/STOL	vertical/short takeoff and landing aircraft

W

WMD	weapons of mass destruction
WME	weapons of mass effects
WPS	Worldwide Port System

T

TADIL	Tactical Data Information Link
TALCE	Tanker Airlift Control Elements
TBM	Theater Ballistic Missile
TBMCS	Theater Battle Management Core System
TBMD	Theater Ballistic Missile Defense
TC-AIMSII	Transportation Coordinators' Automated Information for Movement System II
TCO	Tactical Control Organization (USMC)
TCTC	Time Critical Targeting Cell (USAF)

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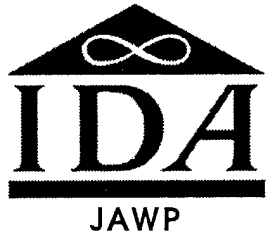
Final Draft

Joint Strike Force Implementation Plan

Joint Advanced Warfighting Program

September 20, 2000

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ILLUSTRATIONS

PART 1.
SUMMARY AND
RECOMMENDATIONS

Summary

BACKGROUND

In the autumn of 1999, the Assistant Secretary of Defense for Strategy and Threat Reduction, Edward L. Warner III, tasked the Joint Advanced Warfighting Program (JAWP) at the Institute for Defense Analyses (IDA) with developing an Operational Concept[1] for the Joint Strike Force (JSF). His was a vision of a rapidly deployable Joint force capable of achieving national military objectives in small-scale contingencies.

The JSF is an innovative approach to command, controlling, and employing Joint forces in support of the Commander in Chief's mission to resolve small-scale contingencies (SSCs) within his area of responsibility (AOR) using rapid and decisive operations in the 2004–2007 timeframe. To develop this capability, the JAWP Concept Development Team's sponsors[2] identified two distinct requirements: an **Operational Concept** and an **Implementation Plan**.

THE JSF OPERATIONAL CONCEPT

The Joint Strike Force is a standing Joint headquarters assigned to the warfighting Commander in Chiefs (CINCs) with synchronized, aligned Joint mission-tailored forces (Figure 1 on the next page). The JSF enables the geographic CINCs to provide the National Command Authority (NCA) with a means of rapidly responding to upper level, small-scale contingencies.

In exchange for the ability to bring combat power to bear in short order, JSF operations will be of limited duration (i.e., approximately 30 days). The JSF will be composed of a theater-based headquarters supported by theater-based units, units and organizations based in the continental United States (CONUS), national assets and agencies, and international organizations and agencies. JSF operations will occur in a rapid and decisive manner—the operations will be phased in such a way as to appear as a near-simultaneous application of combat power. The JSF will use *situational awareness* and *understanding* to strike at nodes in the networks that make up the adversary's power base while, at the same time, protecting and preserving the physical and intangible networks that enable its combat effectiveness. The application of these kinetic

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[1] For the complete JSF Operational Concept, refer to Lynch et al., *Joint Strike Force Operational Concept*, Institute for Defense Analyses, Alexandria, Virginia, 2000.

[2] Assistant Secretary of Defense for Strategy, and Threat Reduction, the Joint Staff Operational Plans and Interoperability Directorate (J-7), and the Joint Staff Force Structure, Resources and Assessment Directorate (J-8).

and non-kinetic strikes[3] will focus on leaving the adversary with only less-than-favorable or un-desirable courses of action, thus compelling him to comply with US demands or international law.
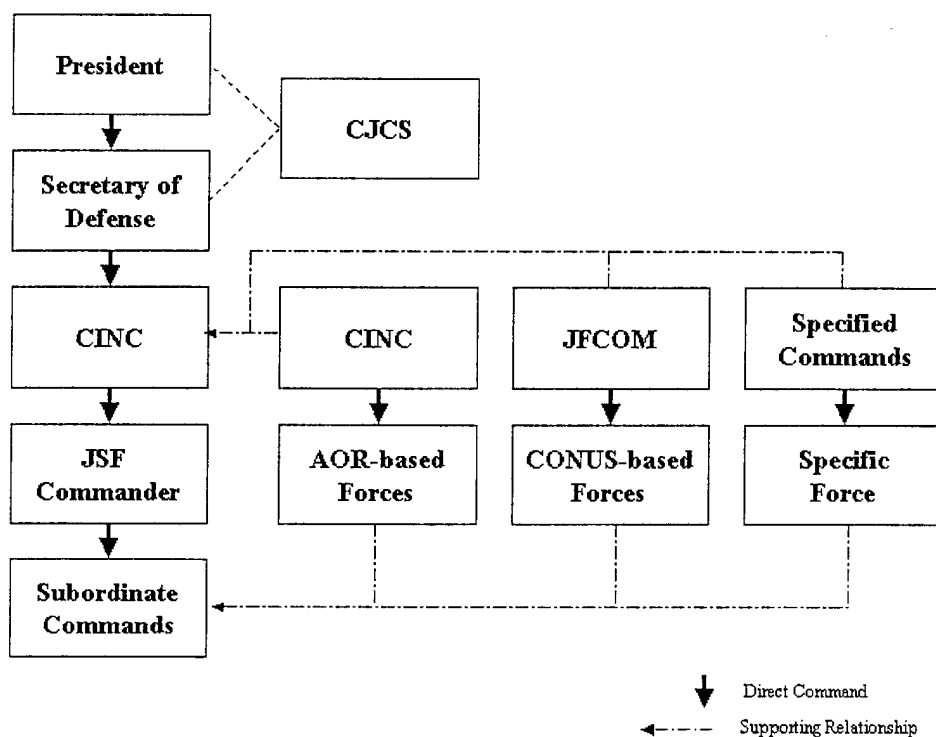
Figure 1.   Command Relationships

In the event that the conflict escalates and becomes a major theater war, the Joint Strike Force will have increased the CINC's situational understanding through its presence and facili-tated the arrival of follow-on force. In the event that the conflict is resolved, the Joint Strike Force will facilitate the transition of Joint Operations Area (JOA) responsibilities to follow-on forces (i.e., peacekeeping forces) and/or non-governmental relief agencies. Following the trans-fer of responsibility to follow-on forces, the Joint Strike Force will redeploy out of the area of operations, reconstitute itself, and resume its peacetime planning, training, and CINC-directed engagement activities.

THE JAWP APPROACH

The Joint Strike Force is one of six future warfighting concepts that are currently being de-veloped under the broad Joint Force Command (JFCOM) concept of Rapid Decisive Opera-

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[3] For the purposes of this paper, *kinetic means* will include options such as air- and sea-launched munitions, direct and indirect fires, and the use of ground forces and special operations forces. *Non-kinetic means* will in-clude options such as information operations, psychological operations, and electronic warfare. *Non-lethal weapons* are included in either one category or the other, depending on their characteristics. It should be noted that the examples listed represent only a small segment of possible options.

tions (RDOs). The timing of the JSF effort was uniquely positioned allowing the JSF Concept Development Team to take advantage of emerging results from both JFCOM's RDO War Games and from Pacific Command's Joint Mission Force War Games.

To develop the JSF Operational Concept, it was necessary to determine what could be accomplished in the allotted time and decide what could be deferred without significantly affecting the development of this concept. The JSF Concept Development Team received additional guidance from its sponsors and from the management and staff of the JAWP, and then began to conceptualize and develop an operational concept. The Concept Development Team's activities were based an iterative model of concept development (depicted in Figure 2).
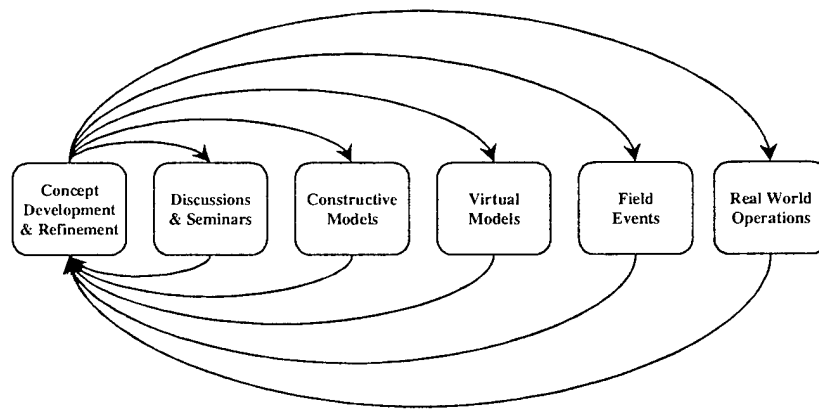
Figure 2.   A Model for Concept Development

The JSF Operational Concept was the product of individual research, input from senior leaders and subject matter experts, and a series of related events (an initial planning conference, three seminar war games, and a headquarters design conference) conducted over a six-month period (January 2000 through June 2000). A more thorough discussion of each activity can be found in the annexes at the end of this report.

▶ WAR GAME #1. The Joint Strike Force War Game # 1 was conducted April 4–7, 2000, at IDA site's in Alexandria, Virginia. The purpose of this war game was to investigate JSF Operational Concept issues related to Joint Intelligence Preparation of the Battlespace and Force Application and Effects.

▶ SENIOR ADVISORY GROUP BRIEFINGS. The JAWP Senior Advisory Group (SAG) is a group of Retired General Officer who routinely review JAWP programs. The JSF Operational Concept was reviewed by the SAG on April 17, 2000, and again on July 13, 2000.

▶ HEADQUARTERS DESIGN CONFERENCE. During the period April 18–19, 2000, the Systems Engineering Department of the United States Military Academy, West Point, New York, conducted the JSF Headquarters Design Workshop to facilitate the development of a design for a JSF Headquarters.

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► **WAR GAME #2.** The JSF War Game #2 was conducted June 5–8, 2000, at IDA's site in Alexandria, Virginia. The purpose of this war game was to investigate JSF Operational Concept issues related to deployment and sustainment.

► **RED TEAM WAR GAME.** The JSF Red Team War Game was conducted June 26–29, 2000, at the Marine Corps Warfighting Lab's Wargaming facility, Quantico Marine Base, Virginia. The purpose of this war game was employ the JSF against a non-cooperative adversary force (Red Team) to gain additional insight into the evolving JSF Operational Concept and the JSF Headquarters Design.

Note: The JAWP Concept Development Team was instructed by the sponsors to invest in exercises requiring intellectual capitol and subject-matter expert input at the expense of using more analytical processes. For the JSF to move from the drawing board to the battlefield, it will be necessary to identify and explore several areas—some known, some unknown—needing additional study and analysis to ensure the feasibility of this concept.

With the JSF Operational Concept representing the fruit of the first stage of experimentation, this transition plan identifies aspects of the Operational Concept that need additional exploration along with the possible means of exploration. While the JSF Operational Concept was intended for use in the 2004–2007 timeframe, the JSF Concept Development Team believes that it is possible to realize many of the innovations identified in the Operational Concept before 2007. These are highlighted in the Recommendations section at the end of this chapter.

THE IMPLEMENTATION PLAN

The Implementation Plan performs four functions. The first two deal with the five issues (enabling concepts) identified in the JSF Operational Plan, i.e., JSF Headquarters Design; Intelligence and Information; Effects Planning and Execution; Logistics Deployment and Sustainment; and Communications and Computers.

► First, the Implementation Plan identifies issues that require additional research and/or analysis and would also be excellent candidates for Limited Objective Experiments (LOEs).

► Second, it identifies issues that are mature enough to be included in currently scheduled Major Service or Joint Experiments, including Advanced Concept Technology Demonstrations (ACTDs).

► Third, it identifies interim capabilities that could be available in the 2004 timeframe.

► Last, it makes recommendations regarding resources decisions necessary for the continued development of the Joint Strike Force concept. The plan also identifies additional resource decisions in those areas where it is prudent to invest now

to capitalize on emerging and desired capabilities to facilitate the acquisition and implementation of Joint Strike Force-like concepts for future Joint Force Commanders.

Several common threads run concurrently through a number of emerging concepts including the Pacific Command (PACOM) Joint Mission Force, JAWP's Joint Strike Force, JFCOM's RDO Wargames and the Future Joint Concepts Group proposal. These include, but are not limited to, the following:

▶ Adaptive Joint Command and Control (AJC2),

▶ Effects-Based Operations (EBO), and

▶ Standing Joint Headquarters,

▶ Deployability and Sustainability.

Annex 5 provides a series of graphics titled "A Possible Experimental Strategy." This strategy provides a possible approach that could be utilized to address the analytical and experimental issues associated with the "common threads" identified above. **Note:** This is not the only approach but the JSF Concept Development Team designed it as both an alternative and as possible input into an integrated experimental campaigning plan.

For organizational purposes, the Implementation Plan has devoted Parts 2 through 6 to the issues (grouped by enabling concepts) originally identified in the JSF Operational Concept document. These are depicted in Table 1 below.

Table 1.   Enabling Concepts and Issue Categories

JSF Headquarters	Intelligence & Information	Effects Planning & Execution	Logistics Deployment & Sustainment	Communications & Computers
• Command-Centric HQ and Scope of Command • Rotational Joint Ready Response Force • Training the Joint Strike Force • Information Operations Warriors • Human Relations	• Intelligence and Nodal Analysis • Human Intelligence (HUMINT) and JSF Operations • Joint Sensor Networks	• AJC2 of Effects-Based Operations • Planning Effects-Based Operations • Unmanned Systems • Information Operations Policy • Information Operations Targeting • Non-Lethal Operations Targeting • Engineer Operations • Military Police Operations • Nuclear, Biological, and Chemical (NBC) Operations	• Strategic Agility • Joint Logistics	• Interoperability and Collaborative Planning

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Recommendations

SHORT- AND MID-TERM RECOMMENDATIONS

Service and Joint Experiments and Exercises through 2004 can provide opportunities for identifying JSF-like capabilities well before 2007. Throughout the development of the JSF Operational Concept and Headquarters design, the effort focused on capabilities projected for the 2004–2007 timeframe. Knowing well the implications of the military procurement system, it was obvious that the majority our recommendations would have application in areas other then materiel (DOTLPF[4]). While acknowledging these limitations, it did not preclude us from identifying needs that could be addressed through lesser materiel solutions, and that we believe could be achieved within the designated timeframe.

While the following recommendations are only oriented on what can be achieved by 2004, they also represent decisions necessary for the success of the Joint Strike Force in the 2007 and beyond timeframe. However, JSF capabilities cannot be realized if these recommendations are not aggressively pursued. We are not suggesting a bull-in-the-china-shop approach but a bold, and aggressive program that will drastically change the ways and means employed by DoD to achieve innovative change.

Annex 6 lists known and scheduled Service and Joint Experiments and Exercises through 2004 that the JSF Concept Development Team considers as possible candidates.

Additionally, Table 2 in Annex 7 shows a relationship between the Issues and the Imperatives (DOTMLPF). Those that are rated high (H) present significant challenges in that Imperative Category while others are rated as medium (M) or low (L). These rating are all subjective and solely based on the professional judgment of the JSF Concept Development Team.

JSF Headquarters

▶ By 2001, an experimental JSF HQ could be established at JFCOM. This experimental headquarters would be utilized to further refine the headquarters design through a series of LOEs and it could be the Joint Headquarters utilized for the Millennium Challenge '02 experiment.

▶ By 2004, the first JSF HQ could be established for one of the geographic CINCs. The geographic CINCS are Pacific Command (PACOM), European

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[4] Doctrine, Organization, Training, Materiel, Leadership Development, Personnel, and Facilities.

Command (EUCOM), Southern Command (SOUTHCOM), and Central Command (CENTCOM).

Training

▶ Joint training and exercise schedules can be aligned to facilitate the initial implementation of a rotation schedule in support of Joint Rotational Rapid Response Forces.

▶ Leader development training at both Service and Joint institutions can begin training future leaders on those core competencies required of future JSF leaders.

Personnel

▶ Review current Joint Officer Management Policy and make recommendations that would better support the manning implications of the JSF Operational Concept and the evolving concept of standing Joint Command and Control elements.

Intelligence and Information

▶ A tremendous increase in HUMINT capabilities can be realized be recruiting individuals with specific language and cultural skills into a organization within a Reserve Component.

▶ Develop a widespread CINC-based nodal analysis capability similar to the one found in Joint Warfare Analysis Center.

▶ Implement policies and procedures that will improve the sharing of intelligence among Services, Agencies, and coalition partners.

Effects Planning and Execution

▶ Encourage the Services to implement force structure designs that support a National Security Strategy that includes forces allocated to the Rotational Joint Ready Response Force Concept.

▶ Increase research and development (R&D) funding for unmanned aerial vehicles (UAVs), uninhabited combat air vehicles (UCAVs), and unmanned underwater vehicles (UUVs). This would include implementing accelerated procurement procedures to rapidly field greater numbers of UAVs, UCAVs and UUVs. This also involves increasing R&D funding for—and rapidly field an increased number of—tele-operated and semiautonomous unmanned ground vehicles as well as leader-following vehicles for logistics.

Logistics Deployment and Sustainment

- ▶ Establish requirements and criteria for use of commercial support for JSF operations. Examples of commercial support include strategic and intra-theater lift, rapid infrastructure contracting support.

- ▶ Establish Joint Theater Logistics Management (JTLM) organization for each CINC.

- ▶ Expeditiously acquire and field logistics information management systems, enhanced materiel handling systems, and transportation support equipment.

- ▶ Revise Service and DoD pre-positioning programs to support rapid deployment and sustainment of JSF operations.

Communications and Computers

- ▶ Implement and enforce policy regarding Joint Standards for computers and communications devices that would be connected to Joint networks.

- ▶ Immediately fund the acquisition of software solutions for the short- to mid-term solutions to Service interoperability issues. This is directed at communications shortfalls as well as interoperability issues associated with the creation of a Joint Common Relevant Operational Picture (CROP).

- ▶ Immediately fund the acquisition of a En route Mission Planning and Rehearsal tool for multi-Service application.

- ▶ Review options and determine the best and most expeditions means to populate the Blue CROP and adopt policy to standardize.

- ▶ Implement and enforce policy requiring future command and control (C2) systems be "born joint" to ensure future interoperability.

- ▶ Develop policy regarding interoperability with allies.

- ▶ Adopt a compatible Joint Collaborative Tool.

- ▶ Immediately fund acquisition of solutions to facilitate the fusion intelligence from multiple sensors and the dissemination of the resulting intelligence products.

- ▶ Fund the continued development and acquisition of intelligent agents and decision aids.

- ▶ Implement and enforce policy regarding bandwidth management.

- ▶ Acquire and rapidly field logistics information management systems.

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- ▶ Fund increased development of compression tools to address bandwidth concerns.

- ▶ Develop database standards to facilitate the further development of a "network of networks." This network of networks would consist of all aspects of intelligence, command and control, and effects in support of AJC2 (CROP, collaborative planning and execution, automated decision aides).

LONG-TERM RECOMMENDATIONS

- ▶ The majority of Senior Leaders agree on the need for capabilities like those that are envisioned for the Joint Strike Force. The disagreements exist over resourcing.

  The JSF Operational Concept is a viable option for future Joint warfighting that requires further analysis and experimentation to refine the Operational Concept, specifically the Headquarters design. This plan attempts to do just that, issue by issue. The disagreements occur regarding resourcing the JSF Headquarters for each of the CINCs and the implications of rotational Joint ready response forces on current and projected force structures.

The resource recommendations outlined in the following sections are organized into three categories: Joint, Service and Interagency Activities and Capabilities. Some items are represented in only one category; others appear in more then one. There are no simple solutions, but there are a number of outstanding "out-of-hide" developed capabilities[5] that we have observed during this effort that could be exploited. Further identification and harvesting of this "low hanging fruit" could accelerate the development process by providing examples of actual need that were addressed solely through the innovative application of limited resources by the user.

- ▶ **JOINT CAPABILITIES.** First and foremost, Jointness must be improved by a magnitude. To accommodate the change envisioned, significant investment must be made in the following Joint (Strategic and Operational) areas.

  - ❑ Joint doctrine and tactics, techniques, and procedures (TTPs).

  - ❑ Interoperability of legacy C2 systems.

  - ❑ Communications architecture to support Information Superiority needs.

  - ❑ Development and acquisition of "born joint":

    - ✪ C2 systems.

    - ✪ Sensors and sensor networks.

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[5] From existing billets and resources.

- Logistics systems.

- Strategic mobility assets.

- Common Joint Data Base(s)

- Increase the number of High Demand/Low Density items.

- HUMINT capabilities.

- Non-lethal weapons.

- Interoperability with allies and coalition partners.

▶ **SERVICE-BASED CAPABILITIES.** It is imperative that funding be provided to synergistic Service-based capabilities. These capabilities include (but are not limited to):

- Training

- Operational mobility

- Unmanned systems (both air and ground).

- Interoperability of legacy systems.

- Communications architecture to support Information Superiority needs.

- Non-lethal weapons.

▶ **INTERAGENCY ACTIVITIES AND CAPABILITIES.** Identify and resource those interagency activities that would support or would work with the JSF in the resolution of SSCs.

PART 2.
THE JSF HEADQUARTERS

COMMAND-CENTRIC HQ AND SCOPE OF COMMAND

ROTATIONAL JOINT READY RESPONSE FORCE

TRAINING FOR THE JOINT STRIKE FORCE

INFORMATION OPERATIONS WARRIORS

HUMAN RELATIONS

Command-Centric HQ and Scope of Command

ISSUE STATEMENT

The JSF Operational Concept recommends the formation and application of a radically new headquarters for Joint warfighting. The design was influenced by information technologies and the capabilities that these technologies provide the future JSF Commander in making more timely and better informed decisions. The result is a *networked headquarters* that is organized around *information* and supported by *functional elements*. The proposed design assumes that simply applying new technologies to existing organizations would not provide the improvements in the command and control necessary to plan and conduct RDOs.

Further exploration, study, analysis, and experimentation are required to develop the C2 structure proposed in the JSF Operational Concept. There are two specific areas requiring additional effort: a front-end functional analysis of both JSF Headquarters Elements (Fixed and Deployable) and the Scope of Command for both headquarters elements. These two areas are so closely related that they are best addressed as the singular command and control issue.

The front-end functional analysis is essential, and it is the first step in validating the JSF Headquarters design and C2 Concept. Failure to conduct this analysis puts the whole concept a risk: the focus of the JSF Headquarters design is on a network-centric headquarters that is designed around information and functions.

COMMAND-CENTRIC HEADQUARTERS

The scope of SSC/Limited Intervention Operations that the JSF might be called upon to undertake blurs the traditional lines between what has historically been described as strategic, operational, and tactical tasks. Therefore, a functional analysis of the various command-level tasks (strategic, operational, and tactical) must be accomplished to redefine responsibilities at the various levels of command within the two elements of the JSF Headquarters (Deployable and Fixed) and within each Cell[6] of both JSF Headquarters' Elements.

Additionally, the JSF C2 Concept also advocates the integration of a number of planning functions that have historically been performed by component commanders into the JSF Headquarters Elements. This was done for two principal reasons: to speed decision making by removing a subordinate level of command, and to help reduce the

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[6] Execution, Information and Operations (I&O), and Logistics.

footprint forward. This requires that a functional analysis of component-level tasks that could be integrated in the JSF Headquarters elements.

Finally, there are a number of Board and Center functions that have been habitually associated with JTF-like headquarters. Examples include the Joint Targeting Coordination Board, the Joint Search and Rescue Center, Joint Movement Center, Joint Operations Center, the Civil-Military Operations Center, and numerous others. A functional analysis of these Boards and Centers must also be conducted to determine how the functions historically carried out by these entities will be accomplished under the JSF C2 Concept.

SCOPE OF COMMAND

Another component of the JSF Operational Concept is the ability of the Joint Strike Force to conduct collaborative planning and execution in a *distributed environment.* Distributed operations include those actions that are accomplished by elements of both the Deployable and Fixed Headquarters" elements with each other, with subordinate and higher headquarters, with national agencies, non-government organizations (NGOs), private voluntary organizations (PVOs), and with coalition partners.

Further analysis is required to clearly define the roles (planning and execution) and relationships between the Deployable and Fixed JSF Headquarters Elements.

Additionally, it is necessary to analyze those functions that the JSF Headquarters must conduct (internally and with others) that lend themselves to a collaborative and distributed environment.

NEAR-TERM GOALS

► Complete functional analysis of all tasks, component planning functions, and Board and Center functions.

► Complete analysis of Scope of Command responsibilities.

► Conduct LOEs to validate the HQ design and the C2 Concept.

► Stand-up an Experimental JSF Headquarters to conduct additional LOEs and the first Major Field Experiment.

► Stand-up the first of the four CINC AORs-based JSF Headquarters, and assess through a series of CINC-directed Joint Training Exercises.

► Conduct a manpower study to determine how to staff the remaining JSF Headquarters.

LONG-TERM GOALS

► Stand-up the remainder of the JSF Headquarters.

▶ Update Service and Joint doctrine.

MEANS OF EXPLORATION

▶ **ANALYSIS.** Analyze tasks, component planning functions, Board and Center functions, and Scope of Command responsibilities functions, focusing on their applicability and means to be conducted through distributed operations.

▶ **LOEs.** Design, conduct, and analyze a number of LOEs. These LOEs could be either stand-alone events or as part of a larger Service/Joint Experiment). Some might include the use of modeling and simulation. Examples:

   ❑ Conduct tasks and skill analysis.

   ❑ Conduct LOE-1 on the Scope of Command responsibilities (based on the results of the task and skill analysis).

   ❑ Revisit task and skill analysis (based on the outcome of LOE-1).

   ❑ Conducted LOE-2 as a train-up to a major Field Experiment.

▶ **FIELD EXPERIMENTS AND CINC-DIRECTED JOINT TRAINING EXERCISES.** Specific experiments to explore:

   ❑ Command-Centric Headquarters Experiment: Functions, functional relationships, and size.

   ❑ Scope of Command: Lower-level SSC, mid-level SSC, and upper-level SSC with elements of Humanitarian Assistance/Disaster Relief.

CANDIDATE PROJECTS

▶ Command Post of the Future

▶ Service experiments

▶ Joint Mission Force (JMF)

▶ Extended Littoral Battlespace (ELB)

▶ Millennium Challenge '02

▶ Olympic Challenge '04

IMPLICATIONS FOR DOTMLPF

▶ **DOCTRINE.** The JSF Operational Concept and Headquarters Design have significant implications on both Service and Joint Doctrine. Changes are

necessary to reflect the changing command relationship between the JSF Commander, the CINC and the Subordinate Commands.

▶ **ORGANIZATION.** The organizational design of the JSF Headquarters represents the first major organizational change in the Joint structure since 1947. The implications of this change will effect the design of other headquarters throughout both the Joint community and within the services.

▶ **TRAINING.** The integration of information technology will require new and unique training for member of the JSF Headquarters and subordinate supporting headquarters. Staffs must be trained in the art and science of distributive collaborative planning and execution. The fact that the JSF Headquarters is designated as a permanent standing headquarters will significantly reduce train-up time when compared with the ad-hoc JTFs of the past.

▶ **MATERIEL.** Materiel implications in support of the JSF Operational Concept and Headquarters Design deal mostly with the need for compatibility to facilitate the exchange of voice digital data. In the near term, translation devices (software) will be available to overcome some compatibility issues. In the long run, DoD should design and develop "born joint" programs. Additionally, it will be necessary to acquire collaboration and automated decision support tools that synthesize large amounts of intelligence and data from a number of diverse sources.

▶ **LEADER DEVELOPMENT.** Leader Development implications involve changing our leader training programs to address the core competencies necessary for future JSF Staff Officers and Commanders. The specifics are addressed in this document.

▶ **PERSONNEL.** The JAWP Concept Development Team estimated that it will take approximately 350 soldiers, sailors, and airmen to staff the JSF HQ Elements. With five proposed JSF Headquarters, that equals to at least 1,850 new requirements to fully field the Joint Strike Force worldwide. A total manpower review is required to determine how to staff these headquarters. Additionally, Joint manning policies will have to be reviewed and changed if the Services are going to be receptive to the Joint Strike Force.

▶ **FACILITIES.** CINCs will have to determine where to position and provide permanent facilities for the Fixed Element of the JSF Headquarters. In addition to the facilities, they will have to provide the gateway and communications architecture to facilitate JSF operations.

Rotational Joint Ready Response Force

ISSUE STATEMENT

Two principals support the Joint Strike Force's ability to rapidly conduct NCA and CINC-directed operations: a standing JSF Headquarters and aligned Joint forces. The aligned Joint forces would be composed of Service-provided circa 2004–2007 forces including:

▶ **ARMY.** One or two brigades, an Airborne Task Force and an Air Assault Task Force.

▶ **NAVY.** One carrier Battle Group.

▶ **AIR FORCE.** Aerial Expeditionary Forces (AEF), composed of Air Expeditionary Wings (AEWs); mobility; and intelligence, surveillance, and reconnaissance (ISR) assets.

▶ **MARINE CORPS.** One or two Marine Expeditionary Brigades.

▶ **SOF.** A Joint Special Operations Task Force.

Each Service would designate subordinate forces to the Joint Strike Force for each of the four CINCs shown in Figure 3. At any given time there would be Army-, Navy-, Air Force-, and Marine-aligned forces that were preparing and/or training to assume ready response force duty (17 weeks), those that were the designated ready response force (17 weeks), and those that were recovering following a rotation as an element of the ready response force (17 weeks).

The proposed rotational scheme would potentially have no effect on current stationing. However, current US military force structure, disposition, and policies must drastically change to support this concept. For rotational Joint Ready Response Forces to be realized, senior leaders[7] must:

▶ Institute a worldwide command structure review beyond the scope of the Unified Command Plan.

▶ Modify worldwide deployments.

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[7] The President; Congress; Secretary of Defense; Chairman, Joint Chiefs of Staff; and the Service Chiefs.

▶ Synchronize and/or re-define Joint Training Exercises worldwide.

▶ Re-define Service Rotational Schedules and Policies.

Implementation of these recommendations throughout the Unified Commands will challenge every force management practice currently employed by the Services and the specified CINCs. The implication of a change of this magnitude must be thoroughly understood before any implementation decisions are made.

JSF Ready Response Force
Notional Rotation Schedule

		EUCOM	PACOM	CENTCOM	SOUTHCOM
ARMY 1-2 Bde's ABN TF AASLT TF	PREPARING READY RECOVERING	1____ 2____ 3____	4____ 5____ 6____	7____ 8____ 9____	10____ 11____ 129____
NAVY Carrier Battle Group	PREPARING READY RECOVERING	1____ 2____ 3____	4____ 5____ 6____	7____ 8____ 9____	10____ 11____ 129____
AIR FORCE AEW 1-2 AEF's Mobility assets	PREPARING READY RECOVERING	1____ 2____ 3____	4____ 5____ 6____	7____ 8____ 9____	10____ 11____ 129____
MARINES 1-2 Marine Expeditionary Brigades	PREPARING READY RECOVERING	1____ 2____ 3____	4____ 5____ 6____	7____ 8____ 9____	10____ 11____ 12____

Figure 3.   Notional Rotational Plan

NEAR-TERM GOALS

▶ Maximize force alignment when and where possible and feasible.

▶ Combine exercises where practical.

LONG-TERM GOALS

▶ Align Joint Forces within each Unified Command.

MEANS OF EXPLORATION

- Perform a through review of PACOM's Joint Mission Force efforts to align Service rotational policies, training schedules, etc.

- Establish a Joint Working Group to establish the scope of what must be studied to further understand the implications of synchronizing the following:

  ❑ Service Rotational Schedules and Policies.

  ❑ Joint Training Exercises

  ❑ Service concepts for supporting the Regional CINCs.

  ❑ Manning and budget implications.

- ▶ Study the specific issues identified by Joint Working Group and develop draft recommendations and policies.

- ▶ Rewrite Joint and Service policies and procedures to reflect changes necessary to support rotational Joint ready response forces.

- ▶ Implement rotational Joint ready response forces for the Regional CINCs.

CANDIDATE PROJECTS

- ▶ PACOM's Joint Mission Force.

- ▶ US Navy's Global Maritime Force Positioning Plan.

- ▶ JFCOM's RDO Efforts.

- ▶ US Special Operations Command (USSOCOM) Reengineering Studies.

IMPLICATIONS FOR DOTMLPF

- ▶ DOCTRINE. Results will significantly change doctrine.

- ▶ ORGANIZATION. Headquarters redesign is necessary to support rotational forces for each of the geographic CINCs.

- ▶ TRAINING. The alignment of Service and Joint training schedules will provide an opportunity to actually train the Joint Strike Force ready response force during a 17-week preparation/training phase. The training implications also include a new focus on institutional training (both individual and Joint Professional Military Education (JPME)) as well as Service Core Competency training.

► **MATERIEL.** N/A

► **LEADER DEVELOPMENT.** The ideas contained in the JSF Operational Concept have significant implications regarding the need to prepare leaders to operate much more frequently in a distributed Joint environment.

► **PERSONNEL.** Implications regarding manning Joint Personnel Policies as well as manning the Ready Response Forces. The Services need to specifically look at the implication of low-density, high-demand specialties, and resolve the density-demand mismatch.

► **FACILITIES.** N/A

Training for the Joint Strike Force

ISSUE STATEMENT

Training for the JSF must occur at multiple levels and through multiple methodologies. In addition to leader development, training at the unit, service component, and force levels is required. The JSF Headquarters will require training in the planning and execution of contingency plans in addition to tactical-level training with the individual service units assigned to the Joint Strike Force. Because of the combined arms nature of the Joint Strike Force, intra-Service training at the unit level is necessary. The Joint Strike Force will utilize distributed training capabilities to conduct much of its training requirement. Distributed training will allow the outside CONUS (OCONUS)-based JSF Headquarters to train with the forces predominately located in CONUS. Training and readiness standards for the JSF Headquarters need to be established as well as readiness reporting standards for the Headquarters and all Service-provided rotational force packages. There is much being done to develop Service-distributed training capabilities that can be adapted to Joint training for the Joint Strike Force. Finally, a training cycle to keep forces rotating into Joint Strike Force assignment is needed. It is expected that the Joint Strike Force and assigned forces will participate in Field Training Exercises (FTXs), Command Post Exercises (CPXs) as well as live and simulated training exercises.

NEAR-TERM GOALS

▶ Establish simulated training capability for initial JSF Headquarters.

▶ Conduct CPX- and FTX-level training using initial Experimental JSF Headquarters.

LONG-TERM GOALS

▶ Establish Joint distributed training capability at the force command level.

▶ Conduct Joint Strike Force training events using theater JSF Headquarters and assigned forces.

▶ Establish Joint training and readiness standards and reporting procedures for the JSF Headquarters.

MEANS OF EXPLORATION

▶ **ANALYSIS.**

❑ Study the extent of training required for the Joint Strike Force. This will have to include Service unit training up through command-level Joint training.

❑ Determine what training systems and communications capability will be required to support distributed training both within the United States and in the multiple theaters.

❑ Determine what facilities will be required to support distributed training both in CONUS and in the theaters.

❑ Determine if a central training facility is required, what equipment it will need, who will man it, and what skills are required.

▶ **EXPERIMENTATION.**

❑ Conduct virtual and real Joint training experiments using distributed training equipment under development by the Services. These experiments will assist in determining what training should be conducted, what facilities are required, the personnel requirements, and other key details.

CANDIDATE PROJECTS

▶ Various Service Distributed Mission Training initiatives

▶ US Army Combined Arms Tactical Training Program

▶ US Navy Battle Force Tactical Trainer

▶ CAVE (Collaborative Automatic Virtual Environment)

IMPLICATIONS

▶ **DOCTRINE.** N/A

▶ **ORGANIZATION.** Joint Strike Force training will require an organization to conduct and track training requirements. This organization will need to be joint and most likely a part of JFCOM.

▶ **TRAINING.** Implementation of this concept of Joint training will require training the trainers in both the systems used and the skill sets required. Joint training and readiness standards for the JSF Headquarters need to be developed.

▶ **MATERIEL.** Significant investment in distributed training equipment will be required. The JSF Headquarters facility should be designed with training embedded into the systems. including simulation and communications capability.

▶ **LEADERSHIP.** Joint Strike Force and Service leadership must embrace the concept of distributed training and allow for networking of Service training systems into a Joint capability.

▶ **PERSONNEL.** It will be necessary to have Joint Service personnel with training skills.

▶ **FACILITIES.** Training facilities that will allow for Joint forces to train simultaneously in multiple missions will have to be established near the location of forces assigned to the Joint Strike Force. A central training coordination facility may be required to coordinate the training, function as a central hub, and serve as a schoolhouse for Joint leader training for the Joint Strike Force.

Information Operations Warriors

ISSUE STATEMENT

If Information Operations is to be considered an effective tool in the JSF Commander's toolkit, the Joint Strike Force must employ the full spectrum of Information Operations (to include both Offensive and Defensive Information Operations). Information Operations must be tightly integrated to help achieve decision superiority and shape the battlespace. The Joint Strike Force must also have experts who understand the full spectrum of Information Operations to ensure its integration is indeed working towards executing the JSF Commander's objectives. We dub these experts "Information Operations Warriors."

Currently we have personnel specialized in various aspects of Information Operations (e.g., psychological operations (PSYOP), electronic warfare (EW)). However, today, DoD maintains very few operators with an overall understanding of all aspects of Information Operations and the potential for a fully integrated Information Operations campaign. In addition, we have no programs in place to evolve these "Information Operations Warriors." As JSF planners attempt to minimize the forward JSF Headquarters's footprint, it is imperative that the Forward JSF leaders be versed in the wide spectrum of means in their particular specialty. As such, we should begin to look at options that will allow DoD to evolve these "Information Operations Warriors."

NEAR-TERM GOALS

► Identify a need for Information Operations Warriors.

► Develop a training program that exposes these Information Operations Warriors to all aspects of Information Operations, including the maximized effects that integration may achieve, and the flexibility to adapt the integration of various Information Operations aspects to the changing battlespace environment.

► Educate other JSF members as to the role of these Information Operations Warriors in JSF operations. Include Information Operations concepts in the training, education, and exercises to ensure integration of Information Operations into all levels of operations.

LONG-TERM GOALS

► The philosophy and capabilities associated with Information Operations must be woven into the total force structure as an integral function.

▸ Establish a cadre of Information Operations Warriors capable of planning, integrating and executing Information Operations as an element of military power. Establish these Information Operations specialists throughout the Total Force, with career paths and appropriate professional military education.

▸ Create mechanisms to identify, track, and expand Information Operations skill sets that are currently low density/high demand to ensure readiness to achieve national objectives.

▸ Develop recruitment and retention programs throughout the Total Force for Information Operations specialists to ensure that DoD's skill base—once developed—does not erode.

▸ Integrate those Information Operations Warriors into JSF operations.

MEANS OF EXPLORATION

▸ Examine past operations and the Information Operations campaigns. Identify lessons learned (both good and not-so-good) and opportunities lost.

▸ Identify and examine all Information Operations-associated organizations (e.g., intelligence agencies, Department of State, Department of Justice, Service organizations) to determine avenues of possible Information Operations integration.

▸ Identify training programs throughout the US government, to develop a single integrated Information Operations training course.

CANDIDATE PROJECTS

▸ Existing Information Operations programs throughout the US government.

▸ Existing Information Operations training courses.

IMPLICATIONS FOR DOTMLPF

▸ **DOCTRINE.** Incorporate concept of Information Operations Warriors as an integral part of Joint Force operations.

▸ **ORGANIZATION.** Identify need for Information Operations Warriors (to include ranks at the senior levels).

▸ **TRAINING.** Develop overall Information Operations Warrior training courses. Educate the other JSF members as to the roles and responsibilities of IO Warriors.

▶ **MATERIEL.** N/A

▶ **LEADERSHIP DEVELOPMENT.** Adopt the concept of Information Operations Warriors, and assimilate into daily operations.

▶ **PERSONNEL.** Identify those traits required of Information Operations Warriors, and screen aspiring members of the military for these skill sets at enlistment and commissioning. Establish Information Operations Warrior specialty codes and track.

▶ **FACILITIES.** N/A

Human Relations Operations

ISSUE STATEMENT

Human Relations Operations (HRO) includes Public Affairs (PA) Operations and Civil Affairs (CA) Operations. As a crisis develops, the Joint Strike Force must understand the battlespace environment, its objectives, and how it might integrate HRO to achieve those objectives. The HRO officer should be invaluable in understanding the local population's perception of JSF operations, putting those operations in a positive a light, and assisting in maintaining popular support. This is critical in obtaining the cooperation and potential support of the local population, the American public, and global audience.

NEAR-TERM GOALS

▶ Increase the role of PA and CA in explaining the use of non-lethal weapons to NGOs as well as the indigenous people in the AOR.

▶ Understand the role of HRO throughout the spectrum of operations from shaping through conflict through transition.

▶ Identify the skills and knowledge base required that will allow the PA Officer to understand the battlespace environment and to work with the Joint Strike Force in a synchronized and synergistic manner.

▶ Consistently educate, train, and exercise HRO units, so that HRO are inherent in all operations.

▶ Increase the role of PA and CA in operations with the local host nation and national media to include the Cable News Network (CNN) and international committee organizations.

LONG-TERM GOALS

▶ Have HRO become an integral component of the Joint Strike Force.

▶ Develop a sufficient number of well-rounded HRO officers to adequately man all JSF and CINC staffs.

MEANS OF EXPLORATION

▶ Analysis of public sectors (two examples)

     □ **POLITICAL ARENA.** Observe and analyze "spin doctors." These are acknowledged experts in identifying controversial "stories" that may hurt their candidates and require minimizing the potential damage. Identify applicable carryover and incorporate into JSF operations.

     □ **ADVERTISING.** Advertisers study a product's potential market, determining whether the product will even sell, and then the best way to sell that product. Identify applicable carryover and incorporate into JSF operations.

▶ Examine past conflicts to determine lost opportunities of integrating public affairs to put the United States in a favorable light.

▶ Interview foreign officials on their perceptions of the United States and identify:

     □ What changes the United States could make to favorably change their perception?

     □ How could the United States change its approach to make unfavorable actions more desirable?

CANDIDATE PROJECTS

▶ Current PA training courses.

▶ Current CA training courses.

▶ Current Information Operations courses, particularly those portions that integrate PA.

IMPLICATIONS FOR DOTMLPF

▶ **DOCTRINE.** Develop a more robust HRO doctrine that reflects the needs of military commanders primarily but takes into account the desires of Department of State personnel and NGOs. The overarching theme in doctrine should be transitioning as rapidly as possible to NGOs and other government and private organizations so those military units can redeploy to other crisis or to their home bases.

▶ **ORGANIZATION.** Identify the appropriate numbers of HRO officers required at various organizational levels, and populate those organizational levels as required. (As one example, discussions with senior leaders of Operation Allied Force[8] revealed a great lack of PA/CA officers available to them.)

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[8] The 1999 NATO campaign to force Serbian armed forces out of Kosovo.

▶ **TRAINING.** Based on new PA requirements identified, train an increased number (as deemed appropriate) of HRO officers. They must be specifically trained on the all aspects of the employment and use of non-lethal weapons.

▶ **MATERIEL.** N/A

▶ **LEADERSHIP.** Educate and train senior leaders in HRO and the requirement to plan and integrate HRO into all operations.

▶ **PERSONNEL.** Identify the skill sets required of HRO officers, and use these skill sets as criteria for selection of HRO officers.

▶ **FACILITIES.** N/A

PART 3.
INTELLIGENCE AND INFORMATION

INTELLIGENCE AND NODAL ANALYSIS

HUMINT AND JSF OPERATIONS

JOINT SENSOR NETWORKS

Intelligence and Nodal Analysis

ISSUE STATEMENT

For the Joint Strike Force to plan and execute rapid and decisive operations, it will be necessary for it to have an unprecedented level of situational awareness and understanding. In the JSF Operational Concept, the JAWP Concept Development Team posited that this situational awareness and understanding should take the form of a nodal analysis of the adversary networks. If this assumption is sound, it will be necessary for the civil and military components of the Intelligence Community to develop a robust and responsive nodal analysis capability.

NEAR-TERM GOALS

► Develop the capability to rapidly assess and characterize adversary networks in support of rapid and decisive operations.

► Ensure that this capability is available to Joint force planners and Commanders in each CINC's AOR.

LONG-TERM GOALS

► Incorporate this capability into C2 systems so that Commanders can access and share information on specific nodes as needed. (**NOTE:** This will require that classification issues be addressed.)

MEANS OF EXPLORATION

► **ANALYSIS.**

  ❑ Using historical case studies, determine which adversary networks are most important to supporting an adversary's ability to resist US and international mandates, the best means of assessing and characterizing these networks, and the best means of influencing the networks.

  ❑ Using historical case studies, determine the shortfall(s) of nodal analysis and identify areas for improvement or alternative approaches to understanding and characterizing the networks that enable an adversary's ability to resist US and international mandates.

  ❑ Using historical case studies, determine the cost (in terms of time and manpower) of reassessing and updating existing nodal analyses.

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▶ **LOEs.**

    ❑ Determine how long it would take to perform a nodal analysis on a country involved in a developing crisis. Ideally, the country would not be the subject of ongoing US scrutiny. The purpose of this experiment would be to determine a worst case scenario for nodal analysis and provide insight into its effect on the Joint Strike Force's ability to conduct RDOs. Furthermore, it will contribute to the understanding of what ISR assets are most needed in developing situational awareness (through nodal analysis) when initial situational awareness is nil.

    ❑ Determine how long it would take to perform a nodal analysis on a country that has been the subject of US scrutiny for less than two years.

    ❑ Determine how long it would take to perform a nodal analysis on a country that has been the subject of US scrutiny for more than two years.

CANDIDATE PROJECTS

▶ Unified Vision '01

▶ Millennium Challenge '02

▶ Unified Vision '03

▶ Olympic Challenge '04

▶ USAF Global Engagement

▶ USN FBE J/L

▶ Joint Intelligence, Surveillance, and Reconnaissance (JISR) LOE

▶ Joint Continuous Strike ACTD

IMPLICATIONS FOR DOTMLPF

▶ DOCTRINE. N/A

▶ ORGANIZATION. The organization of theater and national intelligence organizations and agencies.

▶ TRAINING. Analysts must be trained to think in terms of networks, not just nodes.

▶ MATERIAL. Rapid nodal analyses may require additional and innovative ISR assets.

▶ **LEADER DEVELOPMENT.** Leaders will need to have a better understanding of the relationships between nodes in a network and the conceptual foundation of nodal analyses.

▶ **PERSONNEL.** Different types of personnel with different skill sets may be needed for conducting nodal analyses (i.e., traditional functional specialties may not be enough for conducting thorough nodal analyses).

▶ **FACILITIES.** N/A

HUMINT and JSF Operations

ISSUE STATEMENT

The JAWP Concept Development Team believes that HUMINT will be an important source of information in planning and conducting RDOs. Denial and deception, hardened/buried facilities, networked organizations, and militia/tribal/gang organizations may limit the effectiveness of traditional intelligence collection platforms and systems. To compensate for this shortfall and to enable the Joint Force Commander to have a better sense of situational awareness and understanding, it will be necessary to develop, use, and exploit traditional and innovative approaches to human intelligence.

NEAR-TERM GOALS

► Strengthen and expand existing overt and covert human intelligence networks.

LONG-TERM GOALS

► Develop a robust overt and covert human intelligence capability that can respond to a decision maker's information needs in a timely manner.

MEANS OF EXPLORATION

► ANALYSIS.

  ❑ Determine the shortfalls of the US HUMINT capability in both the civilian and military sectors.

  ❑ Identify areas that should be considered for expanded HUMINT operations (e.g., ethnic/tribal groups), and the means with which intelligence can be collected on them.

  ❑ Identify innovative approaches to collecting and exploiting HUMINT.

► LOEs.

  ❑ Determine how much useful intelligence can be collected by defense attaches, foreign area officers, and Special Operations Forces. Determine if it enhances the civilian HUMINT efforts or duplicates them.

  ❑ Explore how military intelligence professionals (e.g., special operators, subject matter experts, interrogators) might be incorporated into small units and

task forces so as to improve the tactical and operational Commander's situational awareness and understanding.

❑ Explore how HUMINT can be collected from non-traditional sources (e.g., expatriates, subject matter experts, cultural experts) and exploited in support of military operations.

CANDIDATE PROJECTS

▶ Millennium Challenge '02

▶ Unified Vision '03

▶ Olympic Challenge '04

▶ USA Corps Air Warfare Experiment (AEW)

▶ Joint Intelligence, Surveillance, and Reconnaissance (JISR) LOE

▶ USN KBX/FBE – M

▶ USAF Global Engagement

▶ Integrated Collection Management ACTD

IMPLICATIONS

▶ **DOCTRINE.** Such a capability may change the role of human intelligence within the context of military operations.

▶ **ORGANIZATION.** This type of capability may require a larger number and/or different allocation of intelligence officers within operational and tactical level units.

▶ **TRAINING.** The role and relative importance of human intelligence may need to be stressed in the training courses for military personnel assigned to Joint Strike Forces.

▶ **MATERIEL.** N/A

▶ **LEADERSHIP.** Leaders will need to understand what human intelligence may or may not be able to contribute to their situational awareness, how human intelligence may or may not be collected, etc.

▶ **PERSONNEL.** This concept may require additional (or a different type of) intelligence professionals throughout the subordinate task forces and at the Joint Strike Force headquarters.

▶ **FACILITIES.** N/A

Joint Sensor Networks

ISSUE STATEMENT

The Joint Strike Force's ability to gain, maintain, and exploit situational awareness is based on the development, acquisition, and employment of a robust family of flexible sensor systems. In the *Joint Strike Force Operational Concept* document, the JAWP Concept Development Team posited that the JSF Fixed Headquarters' Information and Operations (I&O) Cell would be responsible for developing a sensor collection plan (which would be an integrated component of the overarching operational plan) capable of supporting current operations, future operations, and the exploitation of time critical targets. The data collected from these sensors would be available to the Task Force Commanders, the Deployable JSF Headquarters, the Fixed Joint Strike Force Headquarters, and national intelligence organizations and agencies.

NEAR-TERM GOALS

▶ Improve the ability of Services to share sensor data in near-real time with higher, Joint headquarters *and* across Service lines.

LONG-TERM GOALS

▶ Develop and acquire a robust and flexible family of networked Joint sensors that can be used in support of rapid and decisive operations.

MEANS OF EXPLORATION

▶ ANALYSIS.

❑ Determine what types of sensors are needed to support tactical and operational decision-making. Capabilities, rather than platforms, should be identified in this analysis.

❑ Determine how many sensors are needed to develop and maintain the level of situational awareness necessary for effective tactical and operational decision-making and the conduct of rapid and decisive operations in a smaller-scale contingency.

❑ Determine whether tactical commanders need direct control over all sensor assets that support their operations or whether they only need control over a portion of the sensors that support their operations.

❑ Determine what an effective family of sensor systems might look like. This family of sensors should encompass the tactical and operational levels of war and should take into account the nature and character of air, ground, naval, space, and cyber operations.

❑ Determine which sensors ought to be networked and the best means of networking the sensors.

❑ Determine if the sensor management aspect of this concept can be automated so as to diminish the personnel requirements of this concept.

▶ **LOEs.**

❑ **JOINT SENSOR COLLECTION PLANS.** In conjunction with existing intelligence and a robust nodal analysis of an adversary, planners should develop a sensor collection plan that is both comprehensive and flexible. Furthermore, it should support notional current and future operations. The concept should be tested in at least four scenarios: (1) against a conventional adversary fighting a conventional fight, (2) against a conventional adversary fighting an unconventional fight, (3) against a conventional adversary fighting a conventional fight complicated by humanitarian assistance/disaster relief requirements, and (4) against a conventional adversary fighting an unconventional fight complicated by humanitarian assistance/disaster relief requirements.

❑ **JOINT COMMAND AND CONTROL OF SENSOR ASSETS.** Assign command and control of Service-based sensors to a Joint Commander. Explore the implications, consequences, and challenges of Joint command and control of sensor systems.

❑ **SUBORDINATE COMMAND AND CONTROL OF JOINT SENSORS.** Explore the implications, consequences, and challenges of allowing Task Force Commanders to access, command, and control Joint sensor systems.

❑ **AUTOMATING AND NETWORKING SENSOR SYSTEMS.** Explore the efficacy of automating and networking components of the sensor network. Specific areas for consideration may include, for example, the relevance of nodal analysis in developing sensor plans, the use of decision aides, and the use of intelligent agents.

CANDIDATE PROJECTS

▶ Unified Vision '01

▶ Millennium Challenge '02

▶ Unified Vision '03

- Olympic Challenge '04

- USAF Global Engagement

- USN FBE – L /KBX-FBE – M

- USA Corps Air Warfare Experiment (AEW)

- Joint Intelligence, Surveillance, and Reconnaissance (JISR) LOE

- Extended Littoral Battlespace (ELB) ACTD

- Information Operations Planning Tools ACTD

- MOUT ACTD

- HUMINT and Counter-Intelligence (CI) Support Tools ACTD

IMPLICATIONS

- **DOCTRINE.** Joint command and control of sensor networks will require new Joint doctrine.

- **ORGANIZATION.** The combination of intelligence, operations, and plans may require significant organizational changes in the Joint Headquarters. Furthermore, depending on the outcome of the analyses, it may be necessary for Services to restructure their intelligence personnel at the tactical and operational levels.

- **TRAINING.** Intelligence professionals may need to become familiar with sensors that operate outside their Service.

- **MATERIAL.** The JSF Operational Concept requires a seemingly large number of different sensor systems to be deployed and employed in support of rapid and decisive operations.

- **LEADERSHIP.** JSF Commanders and Task Force Commanders will need to understand the sensor systems available to them, the importance of articulating both their intent and information requirements, the importance of the sensor collection plan, and the consequences of altering the sensor collection plan in an effort to micromanage efforts.

- **PERSONNEL.** Sensor plan development may require a large number of personnel with diverse backgrounds.

- Facilities. N/A

PART 4.
EFFECTS PLANNING AND EXECUTION

AJC2 OF EFFECTS-BASED OPERATIONS

PLANNING EFFECTS-BASED OPERATIONS

UNMANNED SYSTEMS

INFORMATION OPERATIONS POLICY

INFORMATION OPERATIONS TARGETING

NON-LETHAL OPERATIONS TARGETING

ENGINEER OPERATIONS

MILITARY POLICE OPERATIONS

NBC OPERATIONS

AJC2 of Effects-Based Operations

ISSUE STATEMENT

The ability to prosecute time-sensitive targets[9] through effects-based operations (EBO) is an important capability of the Joint Strike Force. In some instances, the JSF will have to react to a rapidly changing tactical situation. The relatively small size of the JSF, and the limited number of assets that can provide fires[10] and fire support against a large array of targets, requires that the JSF Commander dynamically manage execution of fires. This execution management is conducted through a network of networks that provide for direct tasking and de-conflicting of these and pre-planned fires. The Effects Cell of the JSF Forward HQ monitors the progress of the Commander's pre-coordinated effects plan, and performs assessment of the results based on the desired effects. The Effects Cell determines if branches and sequels to the plan are needed as operations progress, and they coordinate and de-conflict changes as required. The Effects Cell also monitors the battlespace and ensures inter-Service requests for support are answered and intervenes as necessary to prioritize and de-conflict requests.

This control of tactical-level forces from the Operational Commander's Headquarters requires significant exploration, study, analysis, and experimentation.

NEAR-TERM GOALS

▶ Establish experimental Execution Cell and develop initial TTPs.

▶ Establish Execution Cell within first CINC AOR-based JSF Headquarters.

LONG-TERM GOALS

▶ Establish remaining JSF Headquarters with Execution Cells.

▶ Conduct live and virtual JSF training with JSF Headquarters and Service units.

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[9] *Time-sensitive targets* are those opposing force assets that are an immediate threat to friendly forces. They may include missile launchers, tank formations, and command and control nodes.

[10] The term *fires* refer to the delivery of all types of ordnance to include bombs, rockets, missiles, and artillery, as well as other non-lethal means against adversary targets at operational depths.

MEANS OF EXPLORATION

- ▶ **ANALYSIS.** Analyze functions of personnel in the Execution Cell that will perform adaptive command and control of forces. Consideration should be given to span of control, networks required, display requirements, and information flow. Additional attention needs to be directed toward skill sets required.

- ▶ **LOEs.** Conduct a number of LOEs to build upon work done by JFCOM and JAWP in Attack Operations Against Critical Mobile Targets experiments. These LOEs would include exercises that provide for human-in-the-loop interaction with a simulation war game.

- ▶ **SERVICE/JOINT EXPERIMENTS AND EXERCISES.** The Execution Cell would be made a part of experiments involving live forces. These experiments would test the capability of the Execution Cell to perform functions determined by preliminary analysis. They would also provide a capability to test required display systems and networks as well as non-lethal weapons and technologies.

CANDIDATE PROJECTS

- ▶ Command Post of the Future

- ▶ Attack Operations Against Critical Mobile Targets

- ▶ JFCOM AJC2 study

- ▶ Joint Continuous Strike Environment ACTD

- ▶ Theater Precision Strike Operations

- ▶ Information Operations Planning System

- ▶ Adaptive Course of Action ACTD

- ▶ Planning and Decision Aids Program

- ▶ Automated Deep Operations Coordination System (ADOCS)

- ▶ Millennium Challenge '02

- ▶ Service War Games (e.g., Global 2001)

- ▶ Joint Non-Lethal Weapons Directorate Experimentation Plan

- ▶ Service experiments

IMPLICATIONS

▶ **DOCTRINE.** The concept of AJC2 for EBO has significant implication on both Service and Joint doctrine. Some of the doctrine involved include:

❑ Inter-Service fire support coordination.

❑ Employment of Joint non-lethal weapons.

❑ The use of Information Operations against time-critical targets.

❑ Sensor-to-shooter linkages.

❑ Joint Close Air Support.

❑ Joint Suppression of Enemy Air Defenses (JSEAD).

❑ Joint TTPs based on these doctrine changes and changes in information technology that allow AJC2 require development.

▶ **ORGANIZATION.** Giving the JSF Headquarters the capability to affect the tactical battle requires significant changes to the organization of the Joint command and control relationships. Different organization constructs must be developed through the experimental process to determine the most efficient structure.

▶ **TRAINING.** Training in AJC2 for EBO will need to be conducted at multiple levels. Training in procedures within the JSF Headquarters can be accomplished using models and simulation systems. Because of the dispersed nature of the Headquarters and the assigned Service units, training will have to be done by distributed mission-training systems. Both FTXs and CPXs will be used for force and Headquarters training.

▶ **MATERIAL.** Material required for implementing the EBO command and control consists of development of systems capable of providing a common view of the battlespace, de-conflicting airspace, managing fires (effects), and enabling collaborative planning between actors.

▶ **LEADER DEVELOPMENT.** The personnel manning the Effects Cell of the JSF Headquarters will require significant training in Joint and Service operational procedures. Personnel will need to be trained in specific mission areas with a watch qualification process.

▶ **PERSONNEL.** The JSF Operational Concept provides an initial estimate of the number of personnel manning the forward JSF Headquarters. More analysis is required to determine how many are specifically required to man the consoles and systems to manage execution of EBO.

▶ **FACILITIES.** The Execution Cell will require a rapidly deployable facility with significant communications and information management capability. This facility must be defendable and able to move on short notice. This Cell is expected to be co-located with the Commander and part of the Forward Headquarters.

Planning Effects-Based Operations

ISSUE STATEMENT

The JSF Operational Concept posits that EBO (vs. objectives-based operations) will enable Joint Force Commanders to realize desired effects through the efficient application of kinetic and non-kinetic means against specific targets (i.e., nodes) in an adversary's networks. This approach to the planning and execution of operations embraces the recent trend of preferring the precision application of military power over the traditional use of massed forces to achieve massed effects.

NEAR-TERM GOALS

▶ Understand the nature and character of EBO.

▶ Determine the strengths and weaknesses of EBO.

▶ Identify scenarios where EBO should be used and where EBO should be supported (or replaced) by objectives-based operations.

LONG-TERM GOALS

▶ Develop the ability to plan and execute EBO at the JTF level using a broad array of kinetic and non-kinetic military means.

MEANS OF EXPLORATION

▶ ANALYSIS.

❑ Develop and adopt standard definitions for effects, desired effects, effects-based planning, and EBO.

❑ Using historical case studies, determine any lessons learned from historical conflicts that provide insight into the planning and execution of EBO.

❑ Using historical case studies and professional judgment, determine the strengths, weaknesses, and limitations of EBO.

❑ Using historical case studies and professional judgment, determine the types of inputs necessary to planning and conducting EBO (e.g., how well does one need to understand an adversary? What aspects of the adversary does one need to understand?).

- ❑ Using professional judgment, determine the relationship between EBO and objectives-based operations. Furthermore, characterize the nature of this relationship in future operations.

► **LOEs.**

- ❑ Explore the planning requirements of EBO. Areas for research include information requirements, role of NCA and coalition constraint in pursuing desired effects, methods of identifying and estimating unintended consequences, and methods for assessing effects.

CANDIDATE PROJECTS

► Unified Vision '01

► Millennium Challenge '02

► Unified Vision '03

► Olympic Challenge '04

► USAF Joint Expeditionary Force Experiment (JEFX)

► USN FBE Series

► USA Corps Air Warfare Experiment (AEW)

► C4I for Coalition Warfare ACTD

IMPLICATIONS

DOCTRINE. N/A

ORGANIZATION. N/A

TRAINING. If desired effects encompass both tangible and intangible outcomes, it may be necessary to train military planners and operators in different areas.

MATERIEL. N/A

LEADER DEVELOPMENT. If EBO are to be used, it will be necessary for leaders to understand that the operations are about more than just "breaking and killing" things. These type of "soft" operations will need Commanders who understand and appreciate soft operations just as well as they understand and appreciate "hard" operations.

PERSONNEL. Because EBO encompass an intangible target set, it may be necessary to include the "soft" sciences (e.g., psychologists, sociologists, anthropologists) in the planning of EBO.

FACILITIES. N/A

Unmanned Systems

ISSUE STATEMENT

The Joint Strike Force will use unmanned ground, sea, and air systems in the conduct of its operations as a dominant force multiplier. Near-term technology available for the JSF will provide users with unmanned systems that will have tele-operated, semiautonomous, and limited autonomous capabilities. These systems will function as part of a multi-mission combined arms team, and will be teamed with and under control of, humans and their manned systems. Unmanned systems will be utilized in combat, combat support, and combat service support roles, in all theater environments, augmenting and, in some instances, replacing human intervention. Unmanned air and ground systems, both mobile and stationary, will work together to function as part of a sensor-and-fires grid in a networked RSTA (reconnaissance, surveillance, and target acquisition) system.

NEAR-TERM GOALS

▶ Enhance the ability of UAVs to provide sensor inputs into common tactical picture. Increase the quantity and variety of UAVs. Identify suitability of and develop capabilities for future modular payloads.

▶ Introduce unmanned ground vehicles in tele-operated and semiautonomous modes of operation into the JSF. Integrate onboard sensor systems into sensor-to-shooter network.

▶ Begin fielding UUVs in mine-hunting and mine-clearance missions.

LONG-TERM GOALS

▶ Further expand the use of unmanned systems with in the JSF (e.g., UCAVs).

▶ Begin introduction of autonomous ground vehicles into RSTA and logistics missions.

MEANS OF EXPLORATION

▶ ANALYSIS.

❑ Determine what types of unmanned systems are needed to support JSF operations. Capabilities, rather than platforms, should be identified in this analysis.

❑ Determine how many unmanned systems are needed to develop and maintain the level of situational awareness necessary for effective tactical and operational decision-making and the conduct of rapid and decisive operations in a SSC.

❑ Determine whether tactical commanders need direct control over all unmanned assets that support their operations, or whether they only need control over a portion of the unmanned systems that support their operations. Determine the conditions that will warrant changing tactical control of unmanned systems.

❑ Determine what an effective family of unmanned systems might look like. This family of systems should encompass the tactical and operational levels of war and should take into account the nature and character of air, ground, naval, space, and cyber operations.

❑ Determine which systems ought to be networked and the best means of networking the sensors.

❑ Determine if the sensor management aspect of this concept can be automated so as to diminish the personnel requirements of this concept.

▶ MODELING AND SIMULATION.

❑ Model interaction between unmanned systems and human operators. Determine best mix of unmanned systems for force application.

❑ Model missions and mission sets to help develop TTPs.

❑ Model communication requirements for unmanned systems. This will require modeling of both sensor and payload data, and control data.

▶ LOEs.

❑ As the capabilities of unmanned systems become more common and are able to operate in live experiments and exercises, LOEs experiments must be conducted in the following areas:

    ✪ How autonomous should the operation of unmanned systems be?

    ✪ What functions does the robot perform and when does a human need to be involved?

    ✪ How many unmanned systems can be controlled by a single person?

    ✪ Can sensor-to-shooter linkages be improved through the use of unmanned systems?

⊕ What functions can unmanned systems perform and how well?

CANDIDATE PROJECTS

▶ DEMO III

▶ Future Combat System Program

▶ Tactical Mobile Robotics Program (Defense Advanced Research Projects Agency)

▶ Joint Robotics Program

▶ Military Operations on Urbanized Terrain (MOUT) ACTD

▶ High Altitude Endurance UAV ACTD

▶ Tactical UAV ACTD

▶ Tactical UAV Development Programs

▶ Unattended Ground Sensors ACTD

▶ Naval UUV Development Programs

IMPLICATIONS

▶ **DOCTRINE.** The widespread use of unmanned systems on the battlefield is largely unexplored. Significant development of doctrine and TTPs will be required to integrate unmanned systems.

▶ **ORGANIZATION.** Who owns the unmanned systems and whose control they fall under during operations are issues that may require new organizations. It will need to be determined whether unmanned systems are to be integrated into existing force structures, or whether separate commands (such as UAV wings) are necessary. Determine who will be responsible for maintenance and support of systems.

▶ **TRAINING.** The use of unmanned systems will require training for users and operators.

▶ **MATERIEL.** The JSF will require a significant increase in the number of unmanned systems. For example, UAVs must become a high-density item with enough systems to provide a robust view of the battlespace and to perform many other missions. Unmanned ground vehicle (UGV) development will need to be accelerated in order to field an adequate number of systems for use by 2007.

▶ **LEADERSHIP.** Leaders must understand how to integrate unmanned systems into the JSF. This integration will require additional training in doctrine and tactics.

▶ **PERSONNEL.** Operators of unmanned systems will require specialized training and skill sets. This is especially true when controlling UAVs where pilot-like skills are required.

▶ **FACILITIES.** There will be a need for rapidly deployable facilities to house and repair unmanned systems. UAV operations within the JSF will require an ability to construct or use small, unimproved, runways that are located close to or within the JOA from which to operate short-range UAVs.

Information Operations Policy

ISSUE STATEMENT

Today, Information Operations includes many new issues and activities that war planners, at multiple levels, must take into consideration. Some of these involve subtle and complex legal and policy issues with which operators generally are not familiar. Without preplanning and prior coordination, the time required to resolve these issues will most probably be longer than the compressed time in which a JSF Commander needs to make decisions. Therefore, it is imperative that the number of critical legal and policy issues associated with conducting both Offensive and Defensive Information Operations be worked internally, and within the inter-agency community to resolution.

NEAR-TERM GOALS

▶ Ensure Information Operations planning is consistent with existing law of armed conflict (LOAC) and other US treaty obligations.

▶ Ensure Information Operations concepts, systems, and techniques have been reviewed for compliance with applicable law and guidance prior to development, and revalidated prior to employment.

▶ Establish legal guidelines for the conduct of Information Operations overseas, especially in the areas of cyber-operations and perception management.

LONG-TERM GOALS

▶ Given legal guidelines, and viable policy, ensure Information Operations courses of action are included into all applicable CINC and JSF operations plans.

▶ Review current LOAC and US treaty obligations to ensure they still pertain to today's battlespace environment.

MEANS OF EXPLORATION

▶ Examine current legal guidelines, and determine actions required to ensure Information Operations complies with those guidelines.

▶ Examine current policy and strategy to ensure Information Operations compliance.

- ▶ Examine current treaties and agreements to ensure Information Operations compliance.

- ▶ Examine the Information Operations process to determine the most expedient method to execute courses of action.

- ▶ Examine past operations to determine lost Information Operations opportunities due to legal and policy issues.

- ▶ Examine past operations to review Information Operations strategies and Information Operations campaigns implemented by Joint Force Commanders.

CANDIDATE PROJECTS

- ▶ Current Information Operations policies and legal guidelines

- ▶ Current Information Operations R&D projects, to ensure they are in compliance with established policy.

- ▶ Current US treaties and agreements.

- ▶ Lessons learned in recent operations (e.g., Kosovo).

IMPLICATIONS FOR DOTMLPF

- ▶ **DOCTRINE.** Establish policy and legal guidelines for Information Operations, and incorporate into doctrine.

- ▶ **ORGANIZATION.** N/A

- ▶ **TRAINING.** Train operators and senior leaders on established policy and legal guidelines prior to conflict

- ▶ **MATERIEL.** N/A

- ▶ **LEADERSHIP DEVELOPMENT.** Understand Information Operations policy and legal issues. This will allow an expedient assimilation of Information Operations courses of action.

- ▶ **PERSONNEL.** All operators should understand established Information Operations policy.

- ▶ **FACILITIES.** N/A

Information Operations Targeting

ISSUE STATEMENT

Traditionally, kinetic means have been used to destroy, disrupt, deny, and degrade adversary targets. As seen during Kosovo operations, prudent management of kinetic weapons is a necessity as the numbers of targets increase. Information Operations and the use of non-lethal weapons offers a great opportunity to affect future targets, formerly negated by kinetic means. DoD must examine existing target lists, determine what desired effects may be, and the best way to negate those targets, using kinetic, non-lethal, and Information Operations weapons. This examination must then lead to a new way of looking at target negation.

Historically, at times, Information Operations as a weapon system, has been considered an after-thought to kinetic weapons. If the JSF is to truly integrate Information Operations into its operations, Information Operations must sit at the table with kinetic weapons and non-lethal weapons, during target-pairing. This will ensure the JSF Commander maximizes the use of all the tools in his toolkit.

NEAR-TERM GOALS

▶ Identify all possible Information Operations weapons, to determine possible effects when applied to future targets.

▶ Educate target-pairing planners on use of Information Operations weapons systems and deliverable effects.

▶ Develop synergistic tactics for existing Information Operations, non-lethal, and kinetic weapons.

▶ When target-pairing, consider full integration of Information Operations, non-lethal, and kinetic weapons.

LONG-TERM GOALS

▶ Develop future weapons utilizing the fully integrated effects of Information Operations non-lethal, and kinetic weapons.

▶ Develop and train future leaders to consider full integration of all possible weapons systems.

MEANS OF EXPLORATION

- Analysis of historical conflicts, and use of weapons against various targets. Study those targets that were hit with kinetic weapons, to determine whether the non-lethal or IO weapons may have been used instead.

- Examine current TTPs delineating weapons systems for targeting. Search for opportunities to revise, add to, or update current TTPs, using non-lethal and Information Operations weapons systems.

CANDIDATE PROJECTS

- Lessons learned from past conflicts.

- Weapons and tactics schools within the various Services (e.g., Air Force Weapons School).

IMPLICATIONS FOR DOTMLPF

▶ DOCTRINE. Update doctrine to include a synergistic integration of Information Operations, non-lethal, and kinetic weapons, to achieve JSF Commander's objectives.

▶ ORGANIZATION. Include Information Operations and non-lethal weapons planners in unit tactics branches. This encourages a day-to-day working relationship of experts in all weapons systems.

▶ TRAINING. Educate operations planners on the employment of all weapons systems, and the effects each may achieve, against various targets.

▶ MATERIEL. Develop future weapons utilizing the fully integrated effects of Information Operations, non-lethal, and kinetic weapons.

▶ LEADERSHIP DEVELOPMENT. Understand the contributions of various weapons systems, and their possible effects on future targets. Integrate Information Operations and non-lethal weapons into all operations.

▶ PERSONNEL. N/A

▶ FACILITIES. N/A

Non-Lethal Operations Targeting

ISSUE STATEMENT

(The issue statement here is identical to the one for the Information Operations Targeting; it is reiterated for the convenience of the reader.)

Traditionally, kinetic means have been used to destroy, disrupt, deny, and degrade adversary targets. As seen during Kosovo operations, prudent management of non-kinetic weapons is a necessity as the numbers of targets increase. The use of non-lethal weapons offers a great opportunity to affect future targets, formerly negated by non-kinetic means. DoD must examine existing target lists, determine what desired effects may be, and the best way to negate those targets, using non-kinetic, non-lethal weapons. This examination must then lead to a new way of looking at target negation. This will ensure the JSF Commander maximizes the use of all the tools in his toolkit.

Historically, at times, Information Operations as a weapon system has been considered an after-thought to kinetic weapons. If the JSF is to truly integrate Information Operations into its operations, Information Operations must sit at the table with non-kinetic weapons as a separate entity (not as non-lethal weapon), during target pairing. This will ensure the JSF Commander maximizes the use of all the tools in his toolkit.

NEAR-TERM GOALS

▶ Identify DoD and international policies for various types of non-lethal weapons.

▶ Identify all possible non-lethal weapons/technologies, to determine possible effects when applied to future targets.

▶ Educate target-pairing planners on use of non-lethal weapons systems, deliverable effects, and Rules of Engagements (ROE) policies.

▶ Develop synergistic tactics and ROEs for existing non-lethal and non-kinetic weapons.

LONG-TERM GOALS

▶ Develop future weapons utilizing the fully integrated effects of non-lethal and non-kinetic weapons.

▶ Develop and train future leaders to consider full integration of all possible weapons systems.

Means of Exploration

▶ Analyze historical conflicts and use of weapons against various targets. Study those targets that were hit with kinetic weapons to determine whether the non-lethal weapons may have been used instead.

▶ Examine current TTPs delineating weapons systems for targeting. Search for opportunities to revise, add to, or update current TTPs, using non-lethal weapons systems.

Candidate Projects

▶ Joint Non-lethal Directorate policies and TTPs

Implications for DOTMLPF

▶ **Doctrine.** Update doctrine to include a synergistic integration of non-lethal and non-kinetic weapons to achieve JSF Commander's objectives.

▶ **Organization.** Include Information Operations and non-lethal weapons planners in unit tactics branches. This encourages a day-to-day working relationship of experts in all weapons systems.

▶ **Training.** Educate operations planners on the employment of all weapons systems—and the effects each may achieve—against various targets.

▶ **Materiel.** Develop future weapons utilizing the fully integrated effects of non-lethal and non-kinetic weapons.

▶ **Leader Development.** Understand the contributions of various weapons systems and their possible effects on future targets. Integrate non-lethal weapons into all operations.

▶ **Personnel.** N/A

▶ **Facilities.** The current MOUT facilities the Services have are woefully inadequate. Most consist of buildings and some underground features. There are currently plans for nine more of these inadequate facilities. If this is a Joint effort, all funds should be spent on one very big facility with power plants, electrical lines, computer networks, transportation systems, water systems, underground features to include subways, etc., just like a normal urban area. This facility should have an OPFOR (opposing force) permanently located in it. The Services should base their society on a number of different scenarios that the JSF will face, such as clans/ tribes, religious factions, organized crime, narco-terrorism, guerilla movement, caste systems. If this is not done, the JSF will never fully understand the environment they are dealing with and will fail.

Engineer Operations

ISSUE STATEMENT

Engineer personnel and equipment will have a very important role in the ability of JSF units to move within a theater of operations with minimum opposition. The capability to maintain survivability, while at the same time exploiting mobility/counter-mobility in an offensive/defensive asymmetric environment, is a key enabler to the successful accomplishment of assigned JSF operations. This ability will present emerging technologies that will allow for leap-ahead capabilities in battlefield visualization and digital terrain visualization. These technologies and capabilities, while coupled multiple layers of internetted suites of sensors, will allow for revolutionary advancements in Intelligence Preparation of the Battlefield (IPB) and situational understanding.

NEAR-TERM GOALS

▶ Establish virtual communication links, by which modeling and simulations exercises may be accomplished, to begin to identify the nature and scope of engineer assets and personnel required to support JSF operations.

▶ Continue to co-develop required capabilities and engineer TTPs for the incorporation of emerging technologies in unmanned and Tele-operated systems.

▶ Continue to co-develop required capabilities and engineer TTPs for the incorporation of emerging technologies in communications and sensor fusion.

▶ Determine JSF requirements for engineer capabilities and the required infrastructure needed to support them in a Joint environment.

LONG-TERM GOALS

▶ Resource the JSF units the identified equipment required for JSF mission success.

▶ Establish TTPs for JSF operations that can be incorporated into the Joint Service Training Programs of Instruction (POIs).

MEANS OF EXPLORATION

▶ **ANALYSIS.**

❏ As a part of the Experimental JSF Headquarters, engineer personnel participation in distributed training evolutions will assist in the development of required capabilities and TTPs to support the spectrum of operations that may be assigned to a JSF.

❏ Through modeling and simulations, determine the feasibility and utility of new and emerging technologies in the areas of area denial, mine detection and avoidance, and sensor fusion.

CANDIDATE PROJECTS

▶ Unified Vision '01

▶ Millennium Challenge '02

▶ Unified Vision '03

▶ Olympic Challenge '04

▶ MOUT ACTD

IMPLICATIONS

▶ **DOCTRINE.** Current doctrine does not effectively support Joint Service operations. It will be necessary to develop and establish Joint TTPs for all doctrinal guidelines in JSF operations.

▶ **ORGANIZATION.** N/A

▶ **TRAINING.** Training for engineer operations planning, in support of JSF operations, will be heavily dependent on the overall capability of the JSF Headquarters' distributed training architecture. The implementation of collaborative planning, en route mission planning, and digital terrain visualization systems, along with the ability to have real-time sensor tasking, will require a much more realistic training environment—whether it be live or simulated

▶ **MATERIAL.** Common specifications for the production of future Joint Service engineer equipment must be implemented to minimize required logistical support.

▶ **LEADERSHIP.** N/A

▶ **PEOPLE.** N/A

▶ **FACILITIES.** N/A

Military Police Operations

ISSUE STATEMENT

Military Police (MP) units will be an essential capability that the JSF Commander must consider in the Joint troop list equation. In the entire spectrum of JSF operations, MP support will play a vital role. MP units will be tasked to provide traditional support such as maneuver and mobility support operations, force protection, internment and resettlement operations, and law-and-order operations. They will provide a valuable law enforcement link between the JSF Headquarters and the host/allied nation. Most importantly, they will need to have the ability to access and process information available within the JSF AJC2 systems, and at the same time, have the ability to task sensor networks, in real time, to provide the "tooth-to-tail" support that is needed of them.

NEAR-TERM GOALS

▶ Develop Joint doctrine and TTPs to support JSF operations in an asymmetric environment, and be prepared to deploy and execute JSF missions throughout the entire spectrum of operations.

▶ Develop Joint requirements, doctrine, and TTPs for the implementation of emerging technologies in the area of non-lethal effect weapons.

▶ Develop Joint requirements, doctrine, and TTPs for the implementation of emerging technologies in the area of communications and sensor fusion.

LONG-TERM GOALS

▶ Implement and rehearse, though live and virtual environments, the skills needed to effectively support the successful achievement of JSF operations.

MEANS OF EXPLORATION

▶ ANALYSIS.

  ❑ As a part of the Experimental JSF Headquarters, MP participation in distributed training evolutions will assist in the development of required capabilities and TTPs to support the spectrum of operations that may be assigned to a JSF.

□ Through modeling and simulations, determine the feasibility and utility of new and emerging technologies in the areas of maneuver and mobility support operations, force protection, internment and resettlement operations, and law and order operations.

CANDIDATE PROJECTS

▶ Unified Vision '01

▶ Millennium Challenge '02

▶ Unified Vision '03

▶ Olympic Challenge '04

▶ MOUT ACTD

▶ Migration Defense Intelligence Threat Data System ACTD

IMPLICATIONS

▶ **DOCTRINE.** Current doctrine does not effectively support Joint Service operations.

▶ **ORGANIZATION.** N/A

▶ **TRAINING.** MP training for operations planning and execution, in support of JSF operations, will be heavily dependent on the overall capability of the JSF Headquarters' virtual training architecture. The implementation of collaborative planning, en route mission planning, and digital terrain visualization systems, along with the ability to have real-time sensor tasking, will require a much more realistic training environment—whether it be live or simulated

▶ **MATERIAL.** N/A

▶ **LEADERSHIP.** N/A

▶ **PEOPLE.** This field will require the most efficient and adaptive thinking personnel because of the nature of future expected Joint/coalition operations areas and the volatility of emerging threats

▶ **FACILITIES.** Virtual and seamless worldwide links throughout the JSF command structure will facilitate the achievement of distributed training goals determined by a JSF Commander, and uphold the ability to remain ready deployable at a moments notice.

Nuclear, Biological, and Chemical Operations

ISSUE STATEMENT

With the emerging threat of weapons of mass effects (WME) among various rogue nation/states, the JSF Headquarters will highly depend on NBC personnel for the thorough accomplishment of NBC IB, prior to arrival into the JOA. NBC personnel will be prepared to support the JSF effort, with the analysis of intelligence products available, to prevent contamination in the case of a WME attack. Distributed databases with worldwide information on nearby treatment facilities available will also be accessible. They will also be prepared to sense, shield, and methodically treat (through inoculation or decontamination) personnel and equipment in the case of an attack. These tasks will be accomplished by prepared individuals who will have access to robotic and tele-operated equipment to avoid human exposure as much as possible.

NEAR-TERM GOALS

▶ Develop Joint doctrine and TTPs to support JSF operations in an asymmetric environment, and be prepared to deploy and execute JSF missions throughout the entire spectrum of operations.

▶ Develop Joint requirements, doctrine, and TTPs for the implementation of emerging technologies in the area of communications, multiple layered detection systems, sensor fusion, bio-detection, and robotics.

LONG-TERM GOALS

▶ Implement and rehearse, though live and virtual environments, the skills needed to effectively support the successful achievement of JSF operations in a highly probable NBC environment.

▶ Implement and rehearse the TTPs, skills, and equipment needed for a JSF to effectively operate in various types of contaminated environments.

MEANS OF EXPLORATION

▶ ANALYSIS.

   ❑ As a part of the Experimental JSF Headquarters, NBC personnel participation in distributed training evolutions will assist in the development of required capabilities and TTPs to support the spectrum of operations that may be assigned to a JSF.

CANDIDATE PROJECTS

▶ Unified Vision '01

▶ Millennium Challenge '02

▶ Unified Vision '03

▶ Olympic Challenge '04

▶ USAF Global Engagement

▶ USA Corps Air Warfare Experiment (AEW)

▶ Joint Advanced Health and Usage System ACTD

IMPLICATIONS

▶ **DOCTRINE.** Doctrine and TTPs must be developed to utilize NBC personnel and emerging technologies in a *proactive* vs. *reactive* posture. By fusing information from HUMINT, IPB, bio-detection, and acoustic and/or seismic sensors, the JSF Commander will have much better situational awareness of the opposing WME threats—and therefore be prepared to react to a possible attack in a much more effective manner.

▶ **ORGANIZATION.** N/A

▶ **TRAINING.** NBC training for operations planning and execution, in support of JSF operations, will be heavily dependent on the overall capability of the JSF Headquarters' virtual training architecture.

▶ **MATERIAL.** Multiple forms of unmanned equipment will provide great capabilities to a JSF Commander, but modularization of base platforms should be emphasized for minimization of maintenance infrastructure and logistical support.

▶ **LEADERSHIP.** N/A

▶ **PEOPLE.** N/A

▶ **FACILITIES.** Virtual and seamless worldwide links throughout the JSF command structure will facilitate the achievement of distributed training goals determined by a JSF Commander, and uphold the ability to remain ready deployable at a moments notice.

PART 5. LOGISTICS DEPLOYMENT AND SUSTAINMENT

STRATEGIC AGILITY

JOINT LOGISTICS

Strategic Agility

ISSUE STATEMENT

The JSF Operational Concept depends on the ability to project decisive, combat-ready forces anywhere in the world within hours and days vs. weeks and months as in the past. These forces must arrive in the theater and Joint operations area ready to immediately perform their designated combat mission. US forces must overcome formidable time and space challenges that have increased with the emphasis on reducing US forces on foreign soil since the end of the Cold War.

To achieve this rapid response requirement, the JSF must take advantage of all forces and deployment resources available, both strategic and intra-theater assets. These assets and resources include deployable forces, strategic airlift and sealift, theater airlift and sealift, commercial and military transportation support, Service and DoD pre-positioning programs, and a network of support bases that include CONUS bases, intermediate air and sea ports, and Forward Operating Locations (FOLs) near the operations area. To meet the JSF response requirements, these forces, deployment assets, and support bases will have to be operationally integrated much better than they are today.

NEAR-TERM GOALS

▶ Complete detailed analysis of deployment requirements or Time Phased Force Deployment Data (TPFDD) for JSF.

▶ Complete deployment modeling for different rapid response scenarios for EUCOM, PACOM, and CENTCOM.

▶ Conduct detailed analysis of JSF force packaging and force compositing to support rapid air, land, and sea strike operations. This would include a capabilities-based approach to develop a priority of movement and rapid enhancement packages for deployable forces.

▶ Complete analysis of global deployment support infrastructure, basing requirements, and pre-positioning program requirements in support of rapid JSF operations to include scenarios in both mature and austere theaters of operation.

▶ Conduct force projection anti-access analysis to include coastal mines, mobile and man portable anti-ship and anti-air missiles, and WME capabilities.

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▶ Conduct analysis of future capabilities that will mitigate anti-access threats to include establishing protective air and sea corridors, rapidly establishing austere expeditionary airfields within the JOA, and protective measures for ships, landing craft, and aircraft.

▶ Conduct LOEs to develop a Joint deployment planning and execution tool that integrates strategic assets, pre-positioning programs, and theater assets in a collaborative planning and execution environment.

▶ Conduct LOEs to develop Joint deployment support organizations to include CONUS and forward-based air and sea port operations forces.

LONG-TERM GOALS

▶ Establish or reorganize DoD and Service pre-positioning programs to support JSF operations.

▶ Establish or revise host nation and allied support agreements and contingency contracting agreements to support JSF deployment operations.

▶ Conduct LOEs and training exercises to deploy a JSF.

▶ Revise Joint and Service doctrine to reflect Joint deployment operations to include issues that are focused on support of JSF deployment operations.

MEANS OF EXPLORATION

▶ Analyze deployment requirements, deployment capabilities, and shortfalls between requirements and capabilities.

▶ Use modeling and simulation programs to analyze virtual JSF deployments for multiple scenarios.

▶ Conduct LOEs to gain a better understanding of the shortfalls between deployment requirements and capabilities, and propose solutions to overcome expected shortfalls.

▶ Examine strategic ability in the context of field experiments and CINC-directed Joint training exercises.

CANDIDATE PROJECTS

▶ JFCOM's Joint Deployment Process Improvement – 72 Hour TPFDD

▶ Defense Advanced Research Projects Agency's Advanced Logistics Project (ALP)

- Joint Theater Logistics ACTD

- Millenium Challenge '02

- Olympic Challenge '04

IMPLICATIONS

- **DOCTRINE.** The concept for JSF operations will require revised Joint and Service doctrine that includes Joint processes, procedures, and organizations that support deployment operations. This doctrine will also describe responsibilities and relationships among deployment support organizations such as the Services, the US Transportation Command (TRANSCOM), supporting CINCs, the supported CINC, and the JSF.

  - **JTLM.** In the theater of operations, deployment resources will be synchronized and integrated under the JTLM concept. This Joint Staff initiative calls for each theater CINC to develop and implement a plan that will centralize the management of theater logistics under a single process or organization. This will include:

    - Reception, staging, and onward movement of forces to the JOA.

    - Intra-theater air, ground, and sea transportation support.

  - **JOINT AERIAL AND SEA PORT OPERATIONS GROUPS (JPOGS).** JPOGs are Joint organizations that conduct end-to-end throughput operations at theater aerial and sea ports in support of a JSF deployment.

  - **SERVICE ORGANIZATIONAL INITIATIVES.** The JSF must take advantage of current Service initiatives that are focused on providing forces that support future rapid response plans. These include the Army's Interim Brigade Combat Team, the Air Force's Expeditionary Aerospace Force, and the Marine Corps' re-emphasis on the Marine Expeditionary Brigade. There are also ongoing changes in pre-positioning programs that could enhance the deployability of the JSF.

- **TRAINING.** Achieving the strategic agility that the JSF must possess to be effective depends on a methodical, comprehensive, and repetitive training program. This training will take advantage of virtual and simulated environments to increase training frequency without overtasking the forces assigned. It will also take advantage of everyday efforts that are required in support of peacetime engagement in all geographic theaters.

- **MATERIEL.** N/A

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❑ DEPLOYMENT INFORMATION SYSTEMS. The JSF will require continued development and fielding of deployment information systems that support collaborative planning and execution among Service components and supporting and supported organizations. A major step in this direction is the recent initiative to field the Transportation Coordinator's Automated Information for Movements System and Joint Force Requirements Generator as the Joint systems for component planning and execution. Other developments, such as DARPA's ALP, could help fill the collaborative planning and interoperability gap. ALP is a Web-based system that uses automatic information sharing technology to provide real-time access to multiple logistics databases distributed throughout a global network.

❑ FUTURE DEPLOYMENT ASSETS. The JSF will also take advantage of emerging capabilities in deployment assets such as Shallow-Draft, High Speed Shipping (capable of 55+ knots), ultra-heavy lift transport aircraft (capable of carrying 1 million pounds of cargo), and the Future Tilt-Rotor aircraft. These assets should become part of JSF simulation and experimentation efforts to determine optimum requirements.

▶ LEADERSHIP. Deployment managers are required to thoroughly understand all capabilities and resources that can be accessed in support of JSF operations and who know how to integrate these assets in the most effective manner. These leaders will need to aggressively employ deployment assets in the face of adversary threats and understand how to effectively manage risk and exploit opportunities created by using unprecedented strategic, operational, and tactical reach of JSF air, ground, and sea maneuver elements.

▶ PERSONNEL. The JSF will require personnel who understand all areas of the Defense Transportation System and how to optimize throughput of forces and equipment regardless of the scenario.

▶ FACILITIES. Rapid deployment operations will also require an evaluation of deployment support infrastructure both in CONUS and abroad to ensure JSF requirements can be met. The JSF will require a global network of air-, sea-, and ground-transportation support nodes that have flexible capacities that can be rapidly increased to support the surge requirements of a JSF deployment.

Joint Logistics

ISSUE STATEMENT

The JSF concept of logistics must parallel the concept of operations and transition from Service-centric logistics to Joint logistics. To allow the JSF to leverage all sources of support available, and reduce the footprint required to support operations, logistics must be as integrated and synchronized with operations.

The Joint Staff has recently developed a concept called Joint Theater Logistics Management (JTLM) to achieve the goal of logistics integration within each CINC's AOR. This initiative calls for each theater CINC to develop and implement a plan that will centralize the management of theater logistics under a single process or organization. The JTLM will be critical to fill both the initial and long-term sustainment requirements for JSF operations. This effort will also enable JSF components to deploy as light and rapidly as possible.

NEAR-TERM GOALS

▶ Complete detailed analysis of common-user support requirements that can best be leveraged under JTLM.

▶ Complete analysis of logistics command relationships—supporting and supported, Service and components, JTLM and JSF—and Title 10 implications.

▶ Conduct analysis to update logistics requirements—e.g., fuel, munitions—for a JSF force operating under RDO principles.

▶ Conduct modeling and simulation of logistics in support of JSF operations to include scenarios in both mature and austere theaters of operation.

▶ Conduct force projection anti-access analysis to include coastal mines, mobile and man-portable anti-ship and anti-air missiles, and WME capabilities.

▶ Conduct LOEs to develop a Joint logistics planning and execution tool that integrates component requirements and resources with theater and CONUS-based resources in a collaborative planning and execution environment.

- Conduct LOEs to develop components of a JTLM organization to include Joint Distribution Centers, Joint Medical Treatment Centers, Joint Intermediate Maintenance Facilities, and Joint Contracting Centers.

LONG-TERM GOALS

▶ Establish a JTLM organization under each geographic CINC.

▶ Establish or revise host nation and allied support agreements and contingency contracting agreements to integrate into JSF logistics plans.

▶ Field logistics information management systems that support a logistics CROP, collaborative planning, Joint Total Asset Visibility, and real-time status of logistics requirements.

▶ Conduct LOEs and training exercises to sustain JSF operations.

▶ Revise Joint and Service doctrine to reflect a concept of Joint logistics in support of JSF operations.

MEANS OF EXPLORATION

▶ Analyze logistics requirements, logistics capabilities, and shortfalls between requirements and capabilities.

▶ Use modeling and simulation programs to analyze virtual JSF operations and a concept of support to provide sustainment for multiple scenarios.

▶ Conduct LOEs to gain a better understanding of the shortfalls between logistics requirements and capabilities, and propose solutions to overcome expected shortfalls.

▶ Examine Joint logistics in the context of field experiments and CINC-directed Joint training exercises.

CANDIDATE PROJECTS

▶ DARPA's ALP

▶ Joint Theater Logistics ACTD

▶ Joint Medical Operations – Telemedicine ACTD

▶ Small Unit Logistics ACTD

▶ Millennium Challenge '02

▶ Olympic Challenge '04

IMPLICATIONS

DOCTRINE. The concept for JSF operations will require revised Joint and Service doctrine that includes Joint processes, procedures, and organizations that support Joint logistics operations.

- ❑ **JTLM.** In the theater of operations, logistics will be synchronized and integrated under the JTLM concept. This Joint Staff initiative calls for each theater CINC to develop and implement a plan that will centralize the management of theater logistics under a single process or organization. The JTLM will require component organizations to manage and provide support from many functional areas of logistics. Support functions that will be included under JTLM include:

  - ➕ Common-user supply support.

  - ➕ Intermediate ground and aviation maintenance support.

  - ➕ Distribution and materiel management.

  - ➕ Construction and civil engineering support.

  - ➕ Commercial contracting and host nation support.

  - ➕ Personnel, administration, and finance support.

  - ➕ Medical evacuation and treatment support.

- ▶ **TRAINING.** Achieving the goal of Joint logistics will require a rigorous training program that can include staff exercises, simulated scenarios, and live Joint training events. It will also take advantage of everyday efforts that are required in support of peacetime engagement in all geographic theaters.

- ▶ **MATERIEL.**

  - ❑ **LOGISTICS INFORMATION MANAGEMENT SYSTEMS.** The JSF will leverage recent developments in real-time, Web-based logistics information management systems. These systems will support JTAV (Joint Total Asset Visility), a logistics CROP, collaborative planning between Service components, requirements forecasting, and monitoring of logistics readiness. Systems in development include Global Combat Support System (GCSS), JTAV, Global Transportation Network (GTN), and DARPA's ALP.

  - ❑ **MATERIEL HANDLING SYSTEMS.** The JSF will take full advantage of recently or soon to be fielded enhanced materiel handling and transportation support equipment. This includes recent initiatives in container standardization and modularization to handle and transport bulk supplies. The capability to deliver bulk liquid via air platforms is key to eliminating the current require-

ment that forces Joint Force Commanders to establish fixed support bases in the operations area. Fuel support for ground forces will be provided by distributing air-transported fuel from Intermediate Staging Bases (ISBs) to Combat Service Support (CSS) element trucks with mounted modular fuel cell and pump units such as the 900-gallon capacity SIXCON unit. This concept will depend on a robust capability in systems such as the Robertson Refueling System. The Robertson Refueling System includes 800-gallon rigid fuel cells, pumps, and hoses that can be composited to expand or contract capacity and that can be internally transported in medium- and heavy-lift helicopters and fixed-wing aircraft.

This will also depend on robust transportation support systems to include the Container Roll-In/Out Platform, the Load Handling System (LHS), and the Palletized Load System (PLS). The LHS and PLS are truck systems that have the unique ability to self-unload and load Container Roll-In/Out Platforms without the use of external Material Handling Equipment (MHE) support. This equipment will provide a much more efficient capability to transport bulk supplies on the battlefield.

Additionally, recent innovations in aerial delivery and external rotary-wing transport can also be leveraged. These systems, including the Semi-Rigid Deployable Wing, Guided Parafoil Air Delivery System, and the Ultralight Powered Parafoil, can provide GPS-guided delivery of small and large payloads using high offset delivery profiles. These capabilities will greatly enhance our capacity to support ground operations via aerial delivery, and reduce or eliminate the historical requirement to build support bases in the operations area.

▶ **LEADERSHIP.** Logistics leaders are required to thoroughly understand all capabilities and resources that can be accessed in support of JSF operations and how to integrate these assets in the most effective manner.

▶ **PERSONNEL.** The JSF will require multifunctional personnel from staff members to mechanics and technicians to vehicle operators. The JSF staff will require general logisticians who have been immersed in every functional area of logistics from transportation to maintenance to medical support, and who can make decisions or recommendations that includes input from each relevant functional area. Logistics personnel will have to be proficient at accessing risks, and comfortable enough to aggressively take risk when the opportunities are worth it.

▶ **FACILITIES.** Joint logistics will require an analysis of CONUS and theater-based facilities that support logistics operations. This analysis could identify areas where effectiveness could be gained through either centralization or consolidation of smaller facilities providing similar services or decentralization of large facilities.

PART 6.
COMMUNICATIONS AND COMPUTERS

INTEROPERABILITY AND COLLABORATIVE PLANNING

Interoperability and Collaborative Planning

ISSUE STATEMENT

The Joint Strike Force will require a degree of interoperability between Service systems far above what exists today. To achieve the decision superiority required for RDOs, and to coordinate forces in time and space to achieve simultaneous effects, the JSF must have a high degree of Information Superiority. Widely dispersed and inherently Joint operations mean that the forces assigned must share detailed data on friendly and adversary pictures, current operations, plans, and logistic status and requirements.

NEAR-TERM GOALS

▶ Select candidate collaborative planning systems for use by the JSF.

▶ Establish Blue Force tracking capability that allows visibility of friendly forces.

▶ Establish interoperability between variable message format and Link 16 systems.

▶ Outfit the initial Experimental JSF Headquarters with collaborative planning capability.

▶ Establish Joint Fires Network tying together Advanced Filed Artillery Tactical data System (AFATDS), Container Land Attack Warfare System (CLAWS), and Theater Battle Management Core System (TBMCS).

LONG-TERM GOALS

▶ Establish a complete collaborative planning network between JSF Headquarters Cells and appropriate Service components.

▶ Establish a collated sensor network that is integrated with Joint Fires Network.

▶ Establish AJC2 network to allow real-time effects-based command and control.

MEANS OF EXPLORATION

▶ **ANALYSIS.**

❑ In concert with the analysis on issues concerning command and control, conduct a study into what capabilities will be required for collaborative planning systems and networks. This study should determine who is connected to whom, and what tools they need to have available.

▶ **LOES.**

❑ Conduct collaborative planning experiments to determine tools required for operational planning and control of tactical operations. These experiments should be conducted as part of a more robust headquarters design experiment.

❑ Participate in All Service Combat Identification Evaluation Team experiments in interoperability and combat identification.

❑ Participate in Service and Joint experiments and exercises such as Joint Expeditionary Force Experiment (JEFX), Millennium Challenge series of JFCOM experiments, Kernal Blitz, and others to look at their interoperability and collaborative planning concepts and systems.

CANDIDATE PROJECTS

▶ CROP study

▶ Joint Interactive Planner study

▶ Force 21 Battle Command Brigade and Below System development

▶ Blue Force Tracking initiative

▶ USA's En Route Mission Planning and Rehearsal System (EMPRS)

▶ Navy Fires Network

▶ Battlefield Awareness and Data Dissemination ACTD

▶ C4I for Coalition Warfare ACTD

▶ Theater Precision Strike Operations Program

▶ Theater Air and Missile Defense Interoperability ACTD

▶ CINC-21 ACTD

▶ Link-16/JVMF ACTD

- Migration Defense Intelligence Threat Data System ACTD

- Joint Theater Logistics ACTD

- Planning and Decision Aids program

- Information Assurance program

- Dynamic Database program

- All Service Combat Identification Evaluation Team (ASCIET) experiments

- Joint and Service exercises and experiments

IMPLICATIONS

- **DOCTRINE.** N/A

- **ORGANIZATION.** N/A

- **TRAINING.** Data connection and system compatibility are just the beginning of interoperability. Training in Joint systems and procedures are also important aspects of interoperability that allow for efficient use of a combined picture. Also, if planning is to occur on a distributed basis, each member of the team must be familiar with other Service capabilities.

- **MATERIEL.** Collaborative planning software systems must be developed that allow for rapid database search, display of near-real-time tactical picture, and user friendly interfaces. These systems must be common across the Services to allow for truly Joint capability. Service systems must be made interoperable at application and data levels. Tactical data radios and C2 processors need to allow for integration of other service systems.

- **LEADERSHIP.** JSF and Service leaders must support Joint development of interoperable and collaborative planning systems.

- **PERSONNEL.** N/A

- **FACILITIES.** N/A

PART 7. ANNNEXES

JSF War Game #1: Intelligence and Force Application

Headquarters Design Conference

JSF War Game #2: Deployment and Sustainment

War Game #3: Red Team War Game

Acronyms and Abbreviations

ANNEX 1.
JSF WAR GAME #1:
INTELLIGENCE AND FORCE APPLICATION

PURPOSE OF THE WARGAME

The JSF War Game # 1 was conducted April 4–7, 2000, at the Institute for Defense Analysis in Alexandria Virginia. The purpose of this war game was to investigate Joint Strike Force Operational Concept issues related to Joint Intelligence Preparation of the Battlespace (IPB) and Force Application and Effects.

FORMAT OF THE WAR GAME

The JSF War Game #1 was a tabletop seminar-type war game based on a common scenario that included an adversary force and an initial set of friendly forces to accomplish a series of operational-level objectives.

PARTICIPANTS

Participants included representatives from all four Services (USA, USN, USAF, USMC), J7 Joint Staff, the Joint Advanced Warfighting Program (JAWP), US Pacific Command (USPACOM), and US Joint Forces Command (USJFCOM). Additionally, members of the US Military Academy Systems Engineering Division participated to gain insight in preparation for the HQ Design Conference.

DESCRIPTION OF EVENTS

The JSF War Game #1 was conducted over a three-and-a-half day period. The first half-day was spent familiarizing all the participants with the Joint Strike Force Operational Concept, and for the Services to provide an overview of their projected 2007 organizational structure and capabilities. The participants were then divided into two groups. On day two, players participated in either the Joint IPB or the Force Application and Effects working group. On day three, players changed working groups. On day four, issues identified during the various working group sessions were back-briefed to the participants and the sponsor.

CONCLUSIONS AND FINDINGS

The JSF War Game #1 provided valuable insight into Joint IPB functions that the JSF would likely perform and key input regarding how the JSF would apply its allocated forces to achieve operational objectives. Additionally, valuable insights were gained into the functions required to be performed by the JSF Headquarters in the execution of its command and control functions.

ANNEX 2.
HEADQUARTERS DESIGN CONFERENCE

PURPOSE OF THE WAR GAME

During the period April 18–19, 2000, the Systems Engineering Department of the United States Military Academy conducted the JSF Headquarters Design Workshop to facilitate the development of a design for a JSF Headquarters.

FORMAT OF THE WAR GAME

The JSF Headquarters Design Workshop was a seminar-type war game that featured the use of Group Systems to achieve a measure of agreement, generate focused comments and discussion, and synthesize participant input. The Group Systems were facilitated by individual participants sitting at individual work stations and responding to a number of prepared questions using the following process:

▶ Describe. Explain the desired input into Group Systems, purpose, and utility.

▶ Show. Provide a short relevant example.

▶ Do. Have participants complete exercise.

▶ Display. Show ongoing, real-time in Group Systems as participants complete exercise.

▶ Measure of Agreement. Use anonymous query/vote to measure levels of agreement.

▶ Reconcile Disagreement. Discuss rationale for disagreement.

▶ Synthesize Results. Identify low agreement areas, combine synonymous but agreeable input.

Exercises through which input was solicited included:

▶ Identification of the problem.

　　❑ Identify assumptions and constraints.

　　❑ Identify stakeholders.

　　❑ Generate needs statement.

▶ Functional decomposition of the JSF Headquarters.

- ❑ Identify top-level system functions.

- ❑ Identify second-level functions.

- ❑ Identify third-level functions.

▶ Objectives for each Headquarters function.

- ❑ Identify objectives to accomplish top-level objective.

- ❑ Identify objectives to accomplish second-level objective.

▶ Metrics. Identify and define a metric for every bottom-level objective

▶ Architectures. Identify components or elements needed to meet objectives and accomplish functions

▶ Input/output models. Identify for each subsystem

▶ HQ's alternatives.

- ❑ Identify tasks, processes, and activities for the JSF Headquarters.

- ❑ Perform an alternative comparison.

- ❑ Analyze alternative.

PARTICIPANTS

Participants included representatives from all four Services (USA, USN, USAF, USMC); J7 Joint Staff; the JAWP; USPACOM; and USJFCOM. In addition to the seminar participants, GEN Gordon R. Sullivan, USA (Ret.), LTG Daniel W. Christman, USA, BG Eric T. Olson, USA, and BG Fletcher M. Lamkin, USA, participated in the outbrief.

DESCRIPTION OF EVENTS

A two-day workshop was conducted utilizing a systems engineering design methodology to facilitate the development of a design for a JSF Headquarters.

CONCLUSIONS AND FINDINGS

The result of this two-day workshop was the development of a design for a JSF Headquarters whose fundamental characteristics were utilized during the JSF Red Team War Game.

ANNEX 3.
JSF WAR GAME #2:
DEPLOYMENT AND SUSTAINMENT

PURPOSE OF THE WARGAME

The JSF War Game # 2 was conducted June 5–8, 2000, at the Institute for Defense Analysis in Alexandria Virginia. The purpose of this war game was to investigate the JSF Operational Concept issues related to deployment and sustainment.

FORMAT OF THE WARGAME

The JSF War Game #2 was a tabletop seminar-type war game based on a common scenario that included an adversary force and an initial set of friendly forces to accomplish a series of operational-level objectives. To facilitate this war game, a number of assumptions were made and presented regarding both a concept of deployment and a concept of sustainment.

PARTICIPANTS

Participants included representatives from all four Services (USA, USN, USAF, USMC), J7 Joint Staff, the JAWP, USPACOM, and USJFCOM. Additionally, members of the US Military Academy Systems Engineering Division participated to mature results of the HQ Design Conference.

DESCRIPTION OF EVENTS

The JSF War Game #2 was conducted over a three-and-a-half-day period. The first half-day was spent familiarizing all the participants with the JSF Operational Concept. Additionally the participants were briefed on a number of Joint Logistics Activities including the Joint Deployment Process Owner and Opergistics. The participants were then divided into two groups. On day two, players participated in either the Deployment or the Sustainment working group. On day three, the players changed working groups. On day four, issues identified during the various working group sessions were back-briefed to the participants and the sponsor.

CONCLUSIONS AND FINDINGS

The JSF War Game #2 provided valuable insight into the issues of deployment, particularly strategic and operational mobility as well issues concerning how the JSF would be sustained for up to 30 days. Additionally, valuable insights were gained into the functions required for the JSF Headquarters Logistics Cell to perform its command and control functions.

ANNEX 4.
WAR GAME #3: RED TEAM WAR GAME

PURPOSE OF THE WARGAME

The JSF Red Team War Game was conducted June 26–29, 2000, at the Marine Corps Warfighting Lab's Wargaming facility, Quantico Marine Base, Virginia. The purpose of this war game was employ the JSF against a non-cooperative adversary force (Red Team) to gain additional insight into the evolving JSF Operational Concept and the JSF Headquarters Design.

FORMAT OF THE WARGAME

The JSF Red Team Wargame was a tabletop war game based on a common scenario that included an adversary force and a set of friendly forces to accomplish a series of operational-level objectives.

▶ A Red Cell physically played a non-cooperative adversary.

▶ A White Cell played the higher (CINC's) Headquarters and the Fixed Element of the JSF Headquarters.

▶ Additionally, the White Cell adjudicated Red and Blue moves through out the war game.

▶ A Blue Cell consisted of the three Cells of the JSF Deployable Headquarters (Execution Cell, Information and Operations (I&O) Cell, Logistics Cell), and the JSF Commander.

PARTICIPANTS

Participants included representatives from all four Services (USA, USN, USAF, USMC), J2 Joint Staff, the JAWP, USPACOM, and USJFCOM. Additionally, members of the US Military Academy Systems Engineering Division participated to mature results of the HQ Design Conference.

DESCRIPTION OF EVENTS

The Joint Strike Force Red Team War Game was conducted over a four-day period. The first day was spent familiarizing all the participants with the JSF Operational Concept, the JSF Headquarters Design, and the War Game Design, followed by a player train-up and rehearsal period. The first day ended with the Red Cell making its first move against the Blue Cell. Days two and three consisted of two moves by both the Blue Cell and Red Cell, with the moves adjudicated by the White Cell. The US Army's National Simulation Center provided the Joint Military Art of Command Environment

(JMACE) collaborative planning tool to the Blue and White Cells throughout the war game. On day four, the results of the Red Team War Game were back-briefed to the participants and the sponsors.

CONCLUSIONS AND FINDINGS

The Red Team War Game proved to be invaluable as it identified a number of issues that were not adequately addressed in the JSF Operational Concept. These issues included composition of the Cells in the JSF Headquarters and the relationship between the Fixed Headquarters and the Deployable Headquarters regarding all the C2 functions (planning, executing, preparing, assessing and informing) among others.

Transition Plan

	Research Analysis Needs	Small Scale Experiments	Large Scale Experiments

Common Threads

AJC2

Research Analysis Needs:
- Collaborative Tool
- Distributed Operations (Reach-back/forward)
- Virtual Planning and Decentralized Execution
- CROP
  - populating blue
  - populating red (fused intelligence)
  - populating white
  - latency
- Network Requirements
- Decision Support Tools
- Intelligent Agents
- Information Management Tools

Small Scale Experiments:
C2 for the Experimental HQ, EBO, Deployability and Sustainability

Large Scale Experiments:
Essential C2 Elements necessary to facilitate larger experiments below.

Experimental HQ

Research Analysis Needs:
- Design
- Size (Deployable and Fixed)
- Composition
  - Joint, Inter-Agency, Other
- Functions Analysis
  - Tasks
  - Embedded Component Functions
  - Board & Center Functions
- Distributed Operations
  - Between the Forward and Fixed HQ elements
  - With higher, subordinate HQ's & Allies/ Coalition Partners
  - With NGO's / PVO's / Others
- Roles and Missions
- Network Requirements

Small Scale Experiments:
Based on research associated with: Functions Analysis, Composition, Roles & Missions, and Network Requirements

Establish HQ with supporting Cells:
(Execution) (1 & b) (Logistics)

First, utilizing a series of Cell specific vignettes examine:
- The cells role in distributed operations
- The role of the cell in virtual planning and execution
- Collaboration Needs

Second, utilize a scenario based event o examine:
- The relationships between the Cells (Fixed and Fixed)
- Further examine distributed operations
- Cell relationships during virtual planning and execution
- Collaboration

Large Scale Experiments:
Based on lessons learned, employ the HQ Design in a broader scenario based event, including Inter-Agency Play as well as Allied/ Coalition Partner Play.

Based on lessons learned from the broader scenario, utilize the HQ Design as the JFC for a major Joint integrated experiment.

Common Threads	Research Analysis Needs	Small Scale Experiments	Large Scale Experiments

EBO	• Defining Effects Based Operations
	• Desirable Effects
	  • Strategic, Operational, Tactical
	• EBO Targeting (Nodal Analysis?)
	  • targeting non-nodal fce's
	• Fused Intelligence Requirements
	  • Targeting, BDA
	• Means Allocation / Application
	  • Deliberate / Dynamic
	• Network Requirements
	• Information and Operations Cell
	• Execution Cell
		Based on Analysis, data form PE and utilizing the designed Information and Operations Cell, and the Execution Cell(+), conduct a series of individual events including:
		
		• Defining desired Strategic, Operational and Tactical effects.
		  • When to begin and what constitutes a hostile act
		  • Creating an Integrated Campaign Plan
		• Examine alternatives to achieve the desired effects utilizing nodal analysis.
		• Nominate target sets to achieve desired effects.
		• Consider how an adversary can counter/adapt to EBO
		• What sensors are required to dynamically respond to unforeseen events.
		
		The culmination of the individual events would lead to conducting numerous iterations of a Virtual Targeting Board ICW a Seminar War-game or a number of small Simulations.
			Expand the scope of the Small Scale Experiment to include the participation of other agencies (JWAC, JIOC, DIA, etc) conduct an enlarged EBO experiment ICW the experiment discussed previously under HQ Design.
			
			Take lessons learned to one or more of the Warfighting CINC's and ask him to utilize this EBO Concept in an upcoming Joint Exercise in place of the more traditional functions of the Joint Targeting Board. Information can be exploited to address both MTW's and SSC's under the RDO concept.

Deployability & Sustainability	• 72-hour TPFDD • Strategic Deployment • Inter-Theater Lift and Sustainment • Means to Counter Anti-Access • Pre-Positioning Strategies • Logistics CROP • Network Requirements • Relationship to: • Theater / Host Nation Logistics • Service Logistics • Industrial Base • Logistics Cell This Could Start Now	Utilizing the results of the recommended analytical and research need as well as emerging results from JDPO, utilizing a series of vignettes, examine: • strategic deployment alternatives. • Intra-theatre lift and sustainment alternatives • Pre-positioning alternatives Incorporating these results, and the roles and functions of the Logistics Cell (defined in Experimental HQ), utilizing a scenario based event, examine: • deployment, sustainment, redeployment • operational mobility • means to counter anti-access • Collaboration • Network requirements Expand to examine the relationship with the CINC, Host Nation, Services and the Industrial Base.	Further validate the Deployability and Sustainment Concept in a Major Joint Integrated Experiment focused on the role and functions of: • The Logistics Cell • The Joint Theatre Logistics Element - • Run first unopposed - Can we move it all. • Run with minor opposition - What our our p wits of failure - Use Red Team. • Run as part of a JSF/RDO experiment. • Run with MTW expectations. -

ANNEX 6. JSF EVENT MATRIX

Table 2.   Event Matrix

? = FY2000 scope defined but
X = Potential for collaborative efforts
S = Secondary source (minor component)

Event	Type	Date	Command-Centric Head-quarters & Scope of Command	Rotational Joint Ready Re-sponse Force	Training for the JSF	Information Operations Warriors	Public Affairs Operations	Intelligence & Nodal Analysis	HUMINT & JSF Opera-tions	Joint Sensor Networks	AJC2 or EBO	Planning EBO	Unmanned Systems	Interoperability & Col-laborative Planning	Information Operations Policy	Information Operations Targeting	Non-Lethal Operations Targeting	Engineer Operations	Military Police Operations	Strategic Agility	Joint Logistics	NBC Operations
Joint Mission Force	TE	Jun-00	?	?	?	?	?	?	?	?	?	?	?	?	?	?		?	?	?	?	?
RDO Transparent Wargames	WG	Sep-00	?	?	?	?	?	?	?	?	?	?	?	?	?	?		?	?	?	?	?
Unified Endeavor 01-3	TE/LOE	Oct-00																				
IS-C2 Visualization	LOE	Oct-00	?					?		?	?	?		?								
Future of Space Power	Sem	Nov-00								?												
NATO CDE	TE	Dec-00																				
IS-C2 Web of the Future	Sem	Jan-01	?					?		?	?	?	?	?		?						

Event	Type	Date	NBC Operations	Joint Logistics	Strategic Agility	Military Police Operations	Engineer Operations	Non-Lethal Operations Targeting	Information Operations Targeting	Information Operations Policy	Interoperability & Collaborative Planning	Unmanned Systems	Planning EBO	AJC2 of EBO	Joint Sensor Networks	HUMINT & JSF Operations	Intelligence & Nodal Analysis	Public Affairs Operations	Information Operations Warriors	Training for the JSF	Rotational Joint Ready Response Force	Command-Centric Headquarters & Scope of Command
FLEEDO / SD Seminar	Sem	Jan-01		?	?																	
Attack Ops 01	EXP	Jan-01		?	?				?		?	?	?	?	?	?	?					?
Matador 02	TE	Jan-01																				
Army Force Projection / Sustainment Wargame	WG	Feb-01		?	?																	
I&T Sem. Automated Decision Making & Joint C2	Sem	Mar-01							?		?		?	?								?
FLEEDO / SD Workshop	WS	Mar-01																				
Turbo Challenge 01	WG	Apr-01		?	?																	
RSOI 01	WG	Apr-01																				
Army Transformation	WG	Apr-01	?	?	?	?	?		?	?	?	?	?	?	?	?	?	?	?	?	?	?
Command Post (CP) Experiment Phase I	LOE	May-01		?	?				?		?		?	?	?		?					?
FLOW	WG	May-01																				

Event	Type	Date	Command-Centric Headquarters & Scope of Command	Rotational Joint Ready Response Force	Training for the JSF	Information Operations Warriors	Public Affairs Operations	Intelligence & Nodal Analysis	HUMINT & JSF Operations	Joint Sensor Networks	AJC2 or EBO	Planning EBO	Unmanned Systems	Interoperability & Collaborative Planning	Information Operations Policy	Information Operations Targeting	Non-Lethal Operations Targeting	Engineer Operations	Military Police Operations	Strategic Agility	Joint Logistics	NBC Operations
Roving Sands 01	TE	May-01	?							?												
USAF Future Capabilities	WG	May-01	?	?	?	?	?	?	?	?	?	?	?	?	?	?		?	?	?	?	?
CP Experiment Phase II	LOE	Jun-01	?					?		?	?	?		?		?				?	?	
I&T Sem: Enhancing Human Performance, Learning, and Training	Sem	Jun-01			?																	
KBX - FBE I	TE	Jun-01	?	?	?	?	?	?	?	?	?	?	?	?	?	?		?	?	?	?	?
KBX - Capable Warrior	TE	Jun-01	?	?	?	?	?	?	?	?	?	?	?	?	?	?		?	?	?	?	?
CP Experiment Phase III	LOE	Jul-01	?					?		?	?	?		?		?				?	?	
Logistics Experiment	LOE	Jul-01																		?	?	
ASCIET	TE	Aug-01																				
Global	WG	Aug-01	?	?	?	?	?	?	?	?	?	?	?	?	?	?		?	?	?	?	?
JFCOM Analytical Wargame	WG	Sep-01	?	?	?	?	?	?	?	?	?	?	?	?	?	?		?	?	?	?	?

	I&T Sem: Preventing Strategic & Operational Surprise	Ulchi Focus Lens	Bright Star	Ulchi Focus Lens 02	LOE 02-1	I&T Seminar	FBE J	RDO Wargame	FLEEDO / SD Seminar	LOE 02-2	Unified Vision 02	Millenium Challenge 02
Type	Sem	TE	TE	TE	LOE	Sem	TE	WG	Sem	LOE	EXP	EXP
Date	Sep-01	Sep-01	Sep-01	Sep-01	Oct-01	Nov-01	Nov-01	Dec-01	Jan-02	Jan-02	Feb-02	Feb-02
Command-Centric Headquarters & Scope of Command					?	?	?	?		X		X
Rotational Joint Ready Response Force					?	?	?	?		X		X
Training for the JSF					?	?	?	?		X		X
Information Operations Warriors					?	?	?	?		X		X
Public Affairs Operations					?	?	?	?		X		X
Intelligence & Nodal Analysis	?				?	?	?	?		X		X
HUMINT & JSF Operations	?				?	?	?	?		X		X
Joint Sensor Networks	?				?	?	?	?		X		X
AJC2 of EBO					?	?	?	?		X		X
Planning EBO					?	?	?	?		X		X
Unmanned Systems					?	?	?	?		X		X
Interoperability & Collaborative Planning					?	?	?	?		X		X
Information Operations Policy					?	?	?	?		X		X
Information Operations Targeting					?	?	?	?		X		X
Non-Lethal Operations Targeting												
Engineer Operations					?	?	?	?		X		X
Military Police Operations					?	?	?	?		X		X
Strategic Agility					?	?	?	?	X	X		X
Joint Logistics					?	?	?	?	X	X		X
NBC Operations					?	?	?	?		X		X

Event	Type	Date	Command-Centric Headquarters & Scope of Command	Rotational Joint Ready Response Force	Training for the JSF	Information Operations Warriors	Public Affairs Operations	Intelligence & Nodal Analysis	HUMINT & JSF Operations	Joint Sensor Networks	AJCF or EBO	Planning EBO	Unmanned Systems	Interoperability & Collaborative Planning	Information Operations Policy	Information Operations Targeting	Non-Lethal Operations Targeting	Engineer Operations	Military Police Operations	Strategic Agility	Joint Logistics	NBC Operations
I&T Seminar	Sem	Mar-02	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
FLEEDO / SD Seminar	WS	Mar-02																		X	X	
Turbo Challenge 02	WG	Apr-02																				
MC02 - FBE K	IE	Apr-02	S	S	S	S	S	S	S	S	S	S	S	S	S	S		S	S	S	S	S
MC02 - USMC Warrior	IE	Apr-02	S	S	S	S	S	S	S	S	S	S	S	S	S	S		S	S	S	S	S
Army Transformation	WG	Apr-02	S	S	S	S	S	S	S	S	S	S	S	S	S	S		S	S	S	S	S
Roving Sands 02	TE	Jun-02	X							X												
I&T Seminar	Sem	Jun-02	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
JFCOM Analytical Wargame	WG	Jun-02	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
USAF Global Engagement	WG	Jul-02	S	S	S	S	S	S	S	S	S	S	S	S	S	S		S	S	S	S	S
Global	WG	Aug-02	S	S	S	S	S	S	S	S	S	S	S	S	S	S		S	S	S	S	S
JEFX02	TE	Sep-02	S	S	S	S	S	S	S	S	S	S	S	S	S	S		S	S	S	S	S

Event	Type	Date	Command-Centric Headquarters & Scope of Command	Rotational Joint Ready Response Force	Training for the JSF	Information Operations Warriors	Public Affairs Operations	Intelligence & Nodal Analysis	HUMINT & JSF Operations	Joint Sensor Networks	AJC2 or EBO	Planning EBO	Unmanned Systems	Interoperability & Collaborative Planning	Information Operations Policy	Information Operations Targeting	Non-Lethal Operations Targeting	Engineer Operations	Military Police Operations	Strategic Agility	Joint Logistics	NBC Operations
I&T Seminar	Sem	Sep-02	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
FBE L	TE	Sep-02	S	S	S	S	S	S	S	S	S	S	S	S	S	S		S	S	S	S	S
Corps AWE	TE	Oct-02	S	S	S	S	S	S	S	S	S	S	S	S	S	S		S	S	S	S	S
LOE 03-5	LOE	Oct-02	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
LOE 03-1	LOE	Nov-02	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
FLEEDO Event	LOE	FY 03																		X	X	
AA Event	LOE	FY 03																				
JISR Event	LOE	FY 03						X	X	X			X									
EBO Event	LOE	FY 03																				
ASCIET 03	TE	Jan-03																				
LOE 03-2	LOE	Feb-03	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
AAN	WG	Apr-03	S	S	S	S	S	S	S	S	S	S	S	S	S	S		S	S	S	S	S

Event	Type	Date	Command-Centric Headquarters & Scope of Command	Rotational Joint Ready Response Force	Training for the JSF	Information Operations Warriors	Public Affairs Operations	Intelligence & Nodal Analysis	HUMINT & JSF Operations	Joint Sensor Networks	AJC2 or EBO	Planning EBO	Unmanned Systems	Interoperability & Collaborative Planning	Information Operations Policy	Information Operations Targeting	Non-Lethal Operations Targeting	Engineer Operations	Military Police Operations	Strategic Agility	Joint Logistics	NBC Operations
LOE 03-3	LOE	May-03	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
RS 03	TE	May-03																				
KBX - FBE M	TE	Jun-03	S	S	S	S	S	S	S	S	S	S	S	S	S	S		S	S	S	S	S
AO 03	EXP	Jun-03	X					X	X	X	X	X	X	X		X				X	X	
USAF Global Engagement	WG	Jul-03	S	S	S	S	S	S	S	S	S	S	S	S	S	S		S	S	S	S	S
FLOW	WG	Jul-03																				
LOE 03-4	LOE	Aug-03	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
Global	WG	Aug-03	S	S	S	S	S	S	S	S	S	S	S	S	S	S		S	S	S	S	S
JEFX03	TE	Aug-03	S	S	S	S	S	S	S	S	S	S	S	S	S	S		S	S	S	S	S
JFCOM Analytical Wargame	WG	Sep-03	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
FBE - N	TE	Sep-03	S	S	S	S	S	S	S	S	S	S	S	S	S	S		S	S	S	S	S
OC04 CPX	EXP	Mar-04																				

Transition Plan

Event	Type	Date	Command-Centric Headquarters & Scope of Command	Rotational Joint Ready Response Force	Training for the JSF	Information Operations Warriors	Public Affairs Operations	Intelligence & Nodal Analysis	HUMINT & JSF Operations	Joint Sensor Networks	AJC2 of EBO	Planning EBO	Unmanned Systems	Interoperability & Collaborative Planning	Information Operations Policy	Information Operations Targeting	Non-Lethal Operations Targeting	Engineer Operations	Military Police Operations	Strategic Agility	Joint Logistics	NBC Operations
FBE - O	TE	Mar-04	S	S	S	S	S	S	S	S	S	S	S	S	S	S		S	S	S	S	S
AAN	WG	Apr-04	S	S	S	S	S	S	S	S	S	S	S	S	S	S		S	S	S	S	S
OC04	MJIE	May-04																				
USAF Global Engagement	WG	Jul-04	S	S	S	S	S	S	S	S	S	S	S	S	S	S		S	S	S	S	S
LOE 04-1	LOE	Aug-04	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
JEFX 04	TE	Aug-04	S	S	S	S	S	S	S	S	S	S	S	S	S	S		S	S	S	S	S
LOE 04-2	LOE	Sep-04	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
FBE - P	TE	Sep-04	S	S	S	S	S	S	S	S	S	S	S	S	S	S		S	S	S	S	S
JFCOM Analytical Wargame	WG	Sep-04	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
FLOW	WG	Sep-04																				
Extended Littoral Battlespace	ACTD	FY01	X							X	X	X			X							
Integrated Collection Management	ACTD	FY01						X	X	X	X	S			S			S				

Event	Type	Date	Command-Centric Headquarters & Scope of Command	Rotational Joint Ready Response Force	Training for the JSF	Information Operations Warriors	Public Affairs Operations	Intelligence & Nodal Analysis	HUMINT & JSF Operations	Joint Sensor Networks	AJC2 or EBO	Planning EBO	Unmanned Systems	Interoperability & Collaborative Planning	Information Operations Policy	Information Operations Targeting	Non-Lethal Operations Targeting	Engineer Operations	Military Police Operations	Strategic Agility	Joint Logistics	NBC Operations
Information Opns Planning Tools	ACTD	FY01	X			X	X	X		X	X	X		X		X	X					
Joint Advanced Health and Usage Monitoring System	ACTD	FY01	X																	X	X	X
Military Operation in Urban Terrain	ACTD	FY02	X		S					X	X	S	X	X		S		S	S			
C4I For Coalition Warfare	ACTD	FY02	X								X	X		?	?	?	?				X	
Joint Continuous Strike Enviornment	ACTD	FY02	X			X		X			X											
LINK-16	ACTD	FY01	X								X											
Line of Site Anti-Tank	ACTD	FY03		?									S									
Migration Defense Intelligence Threat Data System	ACTD	FY03	X								X								X			
Precision Target Identification	ACTD	FY01									X											
Theatre Precision Strike Operations	ACTD	FY04	X							X	X	X		X		X	X					

Event	Type	Date	Command-Centric Headquarters & Scope of Command	Rotational Joint Ready Response Force	Training for the JSF	Information Operations Warriors	Public Affairs Operations	Intelligence & Nodal Analysis	HUMINT & JSF Operations	Joint Sensor Networks	AJC2 or EBO	Planning EBO	Unmanned Systems	Interoperability & Collaborative Planning	Information Operations Policy	Information Operations Targeting	Non-Lethal Operations Targeting	Engineer Operations	Military Police Operations	Strategic Agility	Joint Logistics	NBC Operations
Battle Damage Assessment in Joint Targeting Toolbox	ACTD	FY01	X							X	X											
Compact Environmental Anomaly Sensor II	ACTD	FY02																				
HUMINT and Counter Intelligence Support Tools	ACTD	FY01	X					X	X	X	X	X		X								
Joint Theatre Logistics	ACTD	FY02	X								S									X	X	
Personnel Recovery Mission Software	ACTD	FY01	X								X											
Theatre Air and Missile Defense Interoperability	ACTD	FY01	X							X	X											

ANNEX 7. DOTMLPF ISSUES AND IMPERATIVES

Table 3. DOTMLPF Issues and Imperatives

H = High; M = Medium; L = Low

Event	Issue						
	Doctrine	Organization	Training	Materiel	Leadership	People	Facilities
Command-Centric Headquarters & Scope Of Command	H	H	H	L	H	H	L
Rotational Joint Ready Response Force	H	H	H	L	L	L	L
Training the JSF	L	H	H	M	H	L	M
Public Affairs Operations	M	M	H	L	H	M	L
Information Operations Warriors	M	H	H	L	H	H	L
Intelligence & Nodal Analysis	M	H	H	L	H	H	M
HUMINT & Joint Strike Force Operations	L	L	H	L	H	H	L
Joint Sensor Networks	M	H	H	H	M	M	M
Adaptive Joint C2 of EBO	H	H	H	M	M	M	M
Planning EBO	M	H	H	L	H	M	L
Unmanned Systems	M	M	M	H	M	L	L
Interoperability & Collaborative Planning	M	M	H	M	M	M	L
Information Operations Policy	H	L	M	M	H	M	L

Event	Issue						
	Doctrine	Organization	Training	Materiel	Leadership	People	Facilities
Information Operations Targeting	H	M	H	M	H	M	L
Non-Lethal Operations Targeting	H	M	M	M	M	M	L
Engineer Operations	M	L	M	M	L	L	L
Military Police Operations	M	L	M	M	L	M	L
NBC Operations	H	M	H	H	M	M	M
Strategic Agility	H	M	H	M	M	M	M
Joint Logistics	H	H	H	M	H	L	L

ANNEX 8. ACRONYMS AND ABBREVIATIONS

A

AASLT	Air Assault
ABL	Airborne Laser
Abn	Airborne
ACTD	Advanced Concept Technology Demonstration
ADOCS	Automated Deep Operations Coordination System
AEF	Aerospace Expeditionary Force
AEW	Air Expeditionary Wing
AFATDS	Advanced Field Artillery Tactical Data System
AJC2	Adaptive Joint Command and Control
ALP	Advanced Logistics Project (DARPA)
AOR	area of responsibility
APODS	Aerial port of debarkation
ASCIET	All Service Combat Identification Evaluation Team
AWE	Air Warfare Experiment

B

BDA	Battle Damage Assessment
Bdes	brigades
BG	brigadier general

C

C2	command and control
C4I	command, control, communications, computers, and intelligence
CA	Civil Affairs
CAVE	Collaborative Automatic Virtual Environment
CENTCOM	Central Command
CI	counter-intelligence
CINC	Commander-in-Chief
CLAWS	Container Land Attack Warfare System
CNN	Cable News Network
CONUS	continental United States
CPX	Command Post Exercise
CROP	Common Relevant Operational Picture
CSS	Combat Service Support

D

DARPA	Defense Advanced Research Projects Agency
DIA	Defense Intelligence Agency
DoD	Department of Defense
DOTLPF	Doctrine, Organization, Training, Materiel, Leadership, People, and Facilities

E

EBO	Effects-Based Operations
ELB	Extended Littoral Battlespace
ERMPS	En Route Mission Planning System
EUCOM	European Command
EW	electronic warfare

F

FOL	Forward Operating Location
FTX	Field Training Exercise

G

GCSS	Global Combat Support System
GPS	Global Positioning System
GTN	Global Transportation Network

H

HQ	headquarters
HRO	Human Resources Operations
HUMINT	human intelligence

I

I&O	Information and Operations (Cell)
ICW	in conjunction with
IDA	Institute for Defense Analyses
IMINT	imagery intelligence
IPB	Intelligence Preparation of the Battlefield
ISR	intelligence, surveillance, and reconnaissance

J

J–7	Joint Staff Operational Plans and Interoperability Directorate
JAC2	Joint Adaptive Command and Control

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JAWP	Joint Advanced Warfighting Program		States
JDPO	Joint Deployment Process Owner	OPFOR	opposing force
JEFX	Joint Expeditionary Force Experiment	**P**	
JFCOM	Joint Forces Command	PA	Public Affairs
JIOC	Joint Information Operations Center	PACOM	Pacific Command
		PE	Precision Engagement
JISR	Joint Intelligence, Surveillance, and Reconnaissance	POI	Programs of Instruction
		PSYOP	psychological operations
JMACE	Joint Military Art of Command Environment	PVO	private voluntary organizations
JMF	Joint Mission Force	**R**	
JOA	Joint Operation Area	R&D	research and development
JPME	Joint Professional Military Education	Ret.	retired
		RDO	Rapid, Decisive Operations
JPOG	Joint Aerial and Sea Port Operation Group	ROE	rules of engagement
		RSTA	reconnaissance, surveillance, and target acquisition
JSEAD	Joint Suppression of Enemy Air Defenses	**S**	
		SAG	Senior Advisory Group
JSF	Joint Strike Force	SOUTHCOM	Southern Command
JTAV	Joint Total Asset Visibility	SSC	small-scale contingency
JTF	Joint Task Force	**T**	
JTLM	Joint Theater Logistics Management	TBMCS	Theater Battle Management Core System
JVMF	Joint Variable Message Format	TPFDD	Time Phased Force Deployment Data
JWAC	Joint Warfare Analysis Center	TTP	Tactics, Techniques, and Procedures
L		TRANSCOM	Transportation Command
LHS	Load Handing System		
LOAC	law of armed conflict	**U**	
LOE	Limited Objective Experiment	UAV	unmanned aerial vehicle
G	lieutenant general	UCAV	uninhabited combat air vehicle
M		UGV	unmanned ground vehicle
MHE	Material Handling Equipment	US	United States
MOUT	Military Operations on Urbanized Terrain	USA	US Army
		USJFCOM	US Joint Forces Command
MP	military police	USN	US Navy
MTW	major theater of war	USPACOM	US Pacific Command
N		USSOCOM	US Special Operations Command
N/A	not applicable		
NBC	nuclear, biological, chemical	UUV	unmanned underwater vehicle
NCA	National Command Authority	**W**	
NGO	non-governmental organizations	WME	weapons of mass effects
O			
OCONUS	outside continental United		

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13. ABSTRACT (Maximum 200 words)

The second volume of this three–volume report discusses the JAWP's participation in Millennium Challenge '00 (Appendix D), and the JAWP development of an operational concept and implementation plan for a Joint Strike Force (JSF) during FY2000 (Appendices E and F, respectively). The JSF is a rapidly deployable joint combat force capable of achieving national security objectives in small-scale contingencies. Described are the motivation for developing a JSF, the perceived short-falls in existing capabilities, an overview of the methodology employed by the JSF Concept Development Team in developing the concept, and the concept itself and its implementation. The first volume documents the JAWP efforts in Joint Experiment J9901: Attack Operations Against Critical Mobile Targets. The third volume is a collection of topics that range from interoperability between Services to historical looks at experimentation and warfighting on urban terrain.

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